BUSINESS HORIZONS

FALL 1961 VOL. 4, NO. 3

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THE EXECUTIVE MATCHMAKERS
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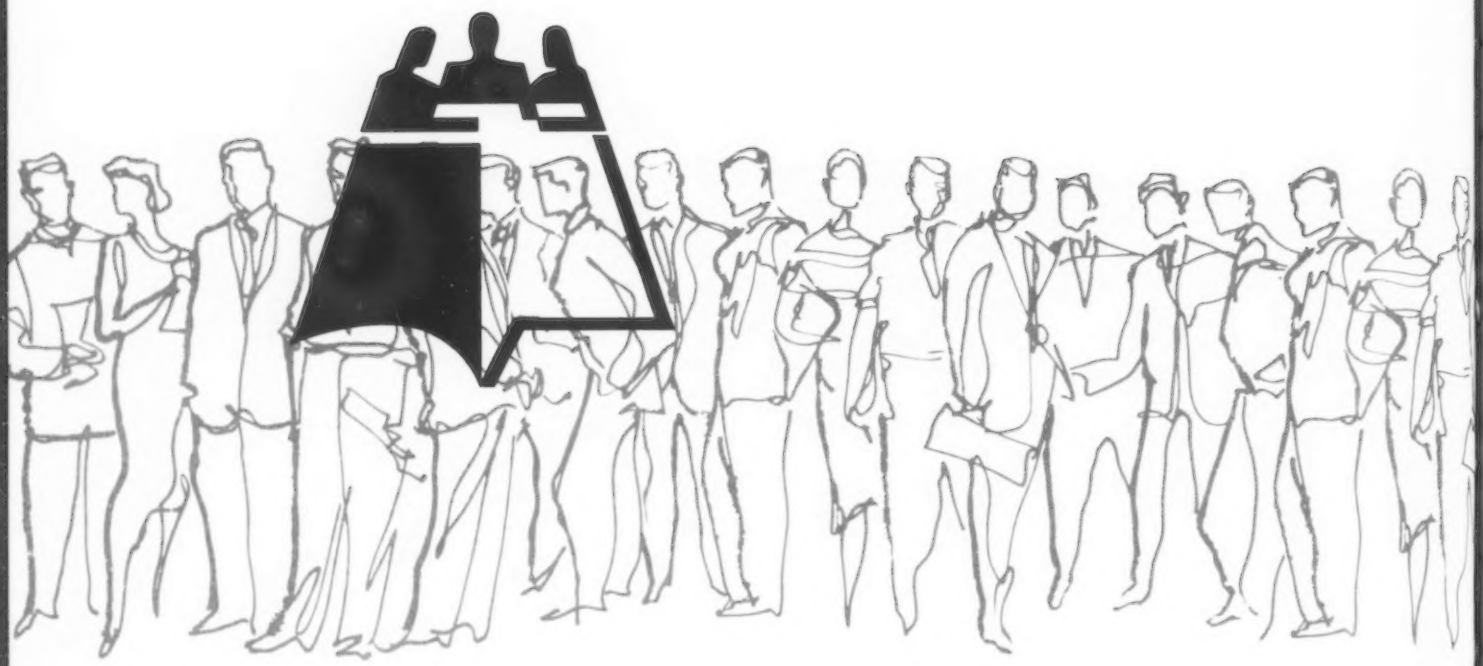
BRINGING INDUSTRY TO THE DEPRESSED AREA
L. T. Wallace and Vernon W. Ruttan

THE PECULIAR PROBLEMS OF A FAMILY BUSINESS
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From work in advertising, sales promotion, and market analysis, Mr. Evans returned to academic life as a Ford Foundation Fellow. He has written several articles on motivation research, one of his major interests. He now teaches marketing at the Graduate School of Business, University of Chicago.

The Brand Image Myth

Considerable weight is given to the concept of brand image in marketing today. Implicit in this concept is the idea that the brand image can be manipulated to achieve predictable results. This approach is vulnerable on both theoretical and empirical grounds; the evidence usually offered in support is shaky. Further, brand imagery is inconsistent with recent theories of consumer behavior. 19

ROBERT F. MOORE

Mr. Moore is Senior Vice-President and Director of Richardson, Bellows, Henry and Company. He is a former director of personnel at Columbia University, SAM Laboratories, and the Atomic Laboratories of the Division of War Research. He has written books and articles on management selection and development.

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AUTHOR | ARTICLE

MERRILL J. ROBERTS

Transportation and distribution have been major interests in Mr. Roberts' professional career. He has been a transportation consultant to the Departments of Commerce and Agriculture and has written several books, articles, and monographs. He is currently Professor of Transportation at the Graduate School of Business, University of Pittsburgh.

Transport Dynamics and Distribution Management

With little fanfare, drastic changes have occurred in transportation services; more are on the way. Everyone concerned with distribution systems, both buyers and sellers of transport services, will be faced with new modes of pricing and coordinating the movement of goods. This wider range of choices and increased flexibility call for more refinements in traffic management techniques. 37

DANIEL L. SPENCER

Mr. Spencer's article is a product of years of writing, study, and research on India. He has been a visiting professor in Indian universities and participated in development of India's third five-year plan. At present he is Professor of Economics and head of the Department of Economics at Howard University.

India's Progress: Plan Three

In Asia, India is the standard bearer of the free world; its future is crucial to the survival of freedom. The past decade has seen substantial advances, but are these enough? While some time remains, we must assess the gains and gaps in Indian development. The third development plan, now getting under way, may be democracy's last chance in India. 49

WILLIAM R. DILL

In the short history of management games, Mr. Dill has been both a pioneer and a leading authority. He worked on the design and use of the Carnegie Tech management game and has written on games, decision making, and organization structure. He currently teaches industrial administration at Carnegie Tech.

What Management Games Do Best

The management game has grown from a curiosity to one of the most promising innovations in the business world. The rapid growth has brought forth games, experts, and opinions in abundance, but the enthusiasm has obscured systematic study of what the games are best suited for. Briefly, the games can be best used to stimulate, simulate, and test. 55

ALAN A. ROBERTS

Sales management and marketing research have been major career interests for Mr. Roberts, now Marketing Research Director and Vice-President of the Western Division of Geyer, Morey, Madden, and Ballard, Inc. He has been a consultant for several chemical firms.

Applying the Strategy of Market Segmentation

The strategy of dividing and conquering through market segmentation is widely practiced. Less well developed is a basis for deciding when a market segment is worth cultivating. The experience of several companies in applying this strategy points up some general conclusions about division of markets and warns of the dangers of excessively rigid segmentation. 65

W. DAVID MAXWELL

Mr. Maxwell is an Associate Professor of Economics at Tulane University. His articles, which deal with many subjects, have appeared in professional economic journals. His interest in the city traffic problem began with background work for an urban studies seminar.

Not Free But a Small Fee

Free public transportation has been proposed as a way out of the urban traffic jam. The idea has gained increasing favor because it appears to be aimed at the heart of the problem—the automobile rider who shuns mass transportation. Is a free ride likely to solve the problem? Perhaps the auto offers advantages that even wide cost differences cannot overcome. 73

D. D. RAY

A former consultant to the U.S. General Accounting Office, Mr. Ray is now teaching at the University of Florida. He has written several articles on relationships between accounting and other disciplines.

Are Accountants Misstating Profits?

The charge is often made that we are "misstating profits" through traditional accounting methods. A frequent criticism is that accountants fail to measure "economic" or "real" profit. Before we carry this too far, we need to think about the exact nature of "economic" profit and evaluate how closely we measure it with conventional accounting tools. 77

L. T. WALLACE AND VERNON W. RUTTAN

Both Mr. Wallace and Mr. Ruttan have done extensive research in regional economic development. Mr. Wallace is an Assistant Professor and Mr. Ruttan a Professor in the Department of Agricultural Economics, Purdue University.

Bringing Industry to the Depressed Area

Tremendous effort toward industrialization as the key to regional development has been put forth in recent years. National policy and both state and local efforts have encouraged economic growth in depressed areas. This study of factors involved in plant location decisions suggests courses of action for communities seeking increased industrialization. 85

GRANT H. CALDER

Mr. Calder is a Professor of Management in the College of Business at the University of Utah. He has written a monograph entitled *Cases in the Management of Small Family-Controlled Manufacturing Businesses.*

The Peculiar Problems of a Family Business

Family businesses that have remained small and under family control for many generations have definite advantages. But they also have special management problems that can do much to determine success or failure. These problems range from management procurement and motivation to keeping family employees "in line." 93

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critique and comment

THE MONETARY COMMISSION REPORT

by Warren L. Smith

THE LONG-AWAITED Report of the Commission on Money and Credit[1] does not really resolve any of the important controversies concerning stabilization policy that have arisen in recent years, and it ducks some of the most difficult issues. Nevertheless, it is an interesting and valuable document, containing a number of recommendations that one hopes will receive the serious attention they deserve from Congress and the Administration.

Twenty-seven members, representing a diverse cross section of American economic life, served on the Commission at one time or another during its three-year existence.[2] The members of the Commission were assisted by an Advisory Board of some thirteen prominent economists, who worked closely with them, and by an extensive research staff. In addition, a large number of outside scholars prepared background papers and research studies. The Report of the Commission includes a considerable number of dissenting opinions by various members on specific points, and the preface contains a disclaimer to the effect that "No member of the Commission . . . endorses personally every specific proposal in its entirety or concurs fully with every statement in the supporting analysis, but all approve the major substance of the report and urge careful consideration of its interrelated recommendations." Considering the controversial nature of a good deal of the subject matter, the Commission was surprisingly successful in achieving such a consensus.[3]

I shall not attempt a systematic

[1] *Money and Credit: Their Influence on Jobs, Prices, and Growth*, The Report of the Commission on Money and Credit (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1961).

[2] The membership of the Commission included six commercial bankers, four representatives of other types of financial institutions, four nonfinancial business men, four lawyers, three representatives of organized labor, one representative of agriculture, two professors, and three with other backgrounds. The Commission originally consisted of twenty-five members, of whom seven failed to serve out the entire period due to resignation or death. Two replacements were appointed, however, so that the Commission consisted of twenty members at the time the Report was issued.

[3] One member of the Commission, H. Christian Sonne, felt that the coverage of the report was inadequate and that the policy recommendations were, in general, not sufficient to deal with the problems facing the nation (see his statement on pp. 4-5 of the Report). He has prepared a statement setting forth his views, which is to be printed separately. This, however, represents the only general dissent from the analysis and recommendations of the Report.

Mr. Smith is Professor of Economics, University of Michigan.



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summary of the contents of the Report, since a brief but rather complete summary has been made available by the Commission itself.[4] Instead, I shall focus my attention primarily on the portions of the Report that deal with the broad objectives of economic policy and the choice of appropriate public policies for the achievement of these objectives.[5]

[4] *Money and Credit: Their Influence on Jobs, Prices and Growth*, the Summary of the Report of the Commission on Money and Credit (New York: Commission on Money and Credit, 1961).

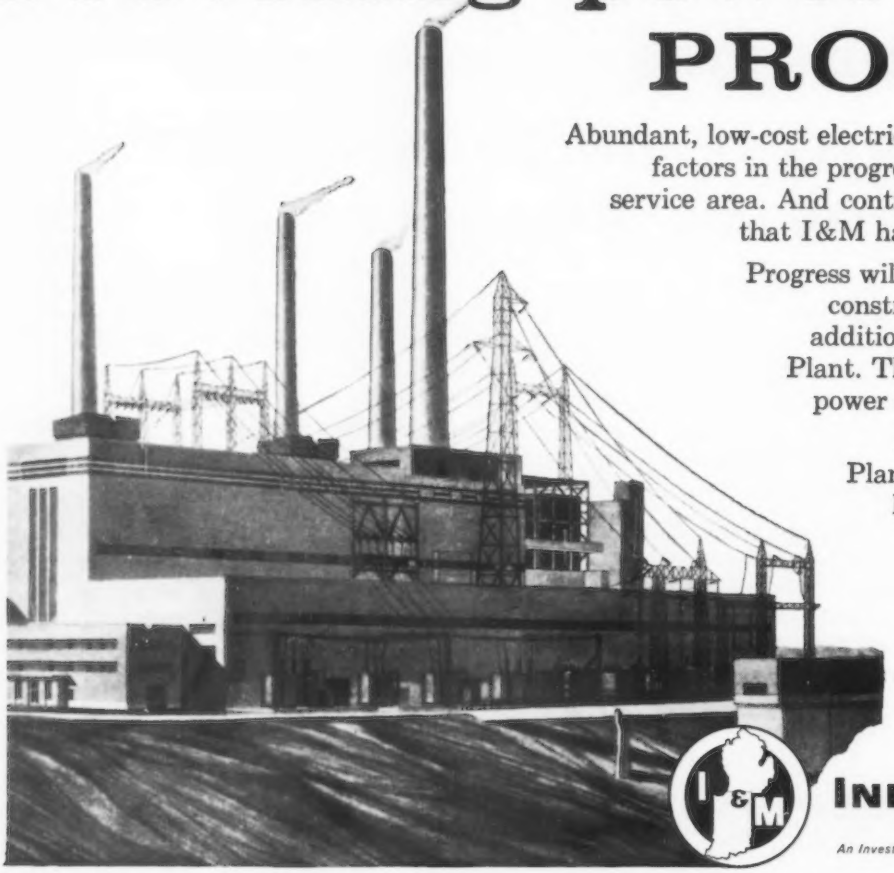
[5] The portions of the Report to which I shall give little or no attention include Chapter 6, which deals primarily with the regulation of private financial institutions and recommends that many of the regulations restricting the actions of these institutions be repealed or relaxed; Chapter 7, which discusses Federal credit programs; and Chapter 8, which deals with international monetary relations and balance of payments problems.

NATIONAL POLICY OBJECTIVES

In my opinion, the greatest weakness of the Report is its failure to face up to the grave difficulties involved in achieving a satisfactory reconciliation among the three main objectives of national economic policy: full employment, price stability, and an acceptable rate of economic growth. This is an extraordinarily acute problem, and in a sense one can scarcely blame the Commission for failing to present a "solution"—if indeed there is one. But when the Commission decided to consider this group of problems, it did accept the responsibility of facing the issues squarely; consequently, it is disappointing to find that the Report minimizes the importance of the conflicts involved and suggests that a solution can readily be achieved without resort to any distasteful measures.

In its definitions of the three objectives, the Report is also rather hazy. The Commission favors "reasonable" price stability, but gives no clear indication as to what this term is supposed to mean. With respect to employment, the Commission refuses to pick an unemployment rate—such as the 4 per cent rate that has somehow come to be almost the official definition of "full employment"—as a proper objective. Instead, it suggests that a new statistical series showing the aggregate number of unfilled job vacancies should be developed and that the monetary and fiscal authorities should try to keep the aggregate number of unemployed roughly equal to the number of unfilled vacancies. Such unemployment as remains when

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this position is reached is, according to this argument, of a frictional or structural nature and is not due to inadequate aggregate demand. Although this approach has a certain plausibility, it is difficult to accept when there is no empirical evidence to show what it would imply with respect to the rate of unemployment under "normal" circumstances. The concept of an "unfilled vacancy" and that of an "unemployed worker" are both quite ambiguous, and the results of a scheme to balance the two would doubtless vary—perhaps substantially – depending on the definitions adopted.

Although it expresses some dissatisfaction with the recent growth record of the American economy, the Commission declines to select any specific rate of growth as a target for the years ahead. Instead, it voices the opinion that if we succeed in regulating aggregate demand so as to achieve "low-level" unemployment and "reasonably" stable prices, we can expect the growth of real GNP to average between 3.5 and 4.5 per cent per year. If the government adopts the proper mix of policy measures, it may, the Commission suggests, be able to raise the rate a little.

The Report concedes that inflation may be generated by cost-push factors, such as increases in money wages in excess of advances in labor productivity or shifts in the composition of demand when wages and prices are substantially more flexible upward than downward. But any difficulties that such a situation may raise for the simultaneous achievement of stable prices, high employment, and rapid growth can quite readily be disposed of, in the Commission's view, by adoption of such agreeable measures as an improved public employment service, re-



training of workers displaced by technical change, more vigorous enforcement of the antitrust laws, low tariffs to encourage foreign competition, propaganda designed to induce labor and management to adopt more "statesmanlike" attitudes in their wage- and price-setting activities, and so on. No unpalatable interference with the processes of collective bargaining or with business pricing practices is called for. The entire problem is neatly "solved" in Chapter 2 and is scarcely ever permitted to interfere with the smooth flow of language during the remaining 240 pages of the Report. I think we professors should insist on an expansion of the facilities of our ivory towers if all of these practical business- and labor-leader types are going to crowd in with us.

MONETARY POLICY

The Report takes cognizance of many of the recent criticisms concerning monetary controls. It accepts the orthodox view that a restrictive policy is more powerful than an expansionary policy. But even with respect to a restrictive policy in time of inflation, the Report makes these concessions: rising interest rates produce partially offsetting increases in velocity; many types of expenditures are rather insensitive to interest rate changes; portfolio adjustments by banks and other financial institutions may partially undercut the effects on the availability of credit; there are troublesome time lags in the process by which monetary controls produce their effects; and general controls are somewhat uneven in their impact on different sectors of the economy. Despite all these difficulties, however, the Commission reaches the conclusion that the total effects may be important and that monetary policy, though sole reliance should not be placed on it, is "a valuable and effective instrument of stabilization policy."

Although I have been partly responsible for several of the criticisms of monetary policy referred to by the Commission, I am not disposed to quarrel with this somewhat imprecise conclusion. But it should be noted that the Commission's verdict concerning monetary policy is based almost entirely on qualitative judgments. There is little indication that the research sponsored by the Commission has uncovered any substantial new evidence concerning the workings of monetary policy.[6] Without doubt, the Commission's final judgment on general monetary controls contains an element of simple faith. Had it been disposed to do so, it could, even on the basis of the limited evidence presented, have arrived at a much more adverse judgment.

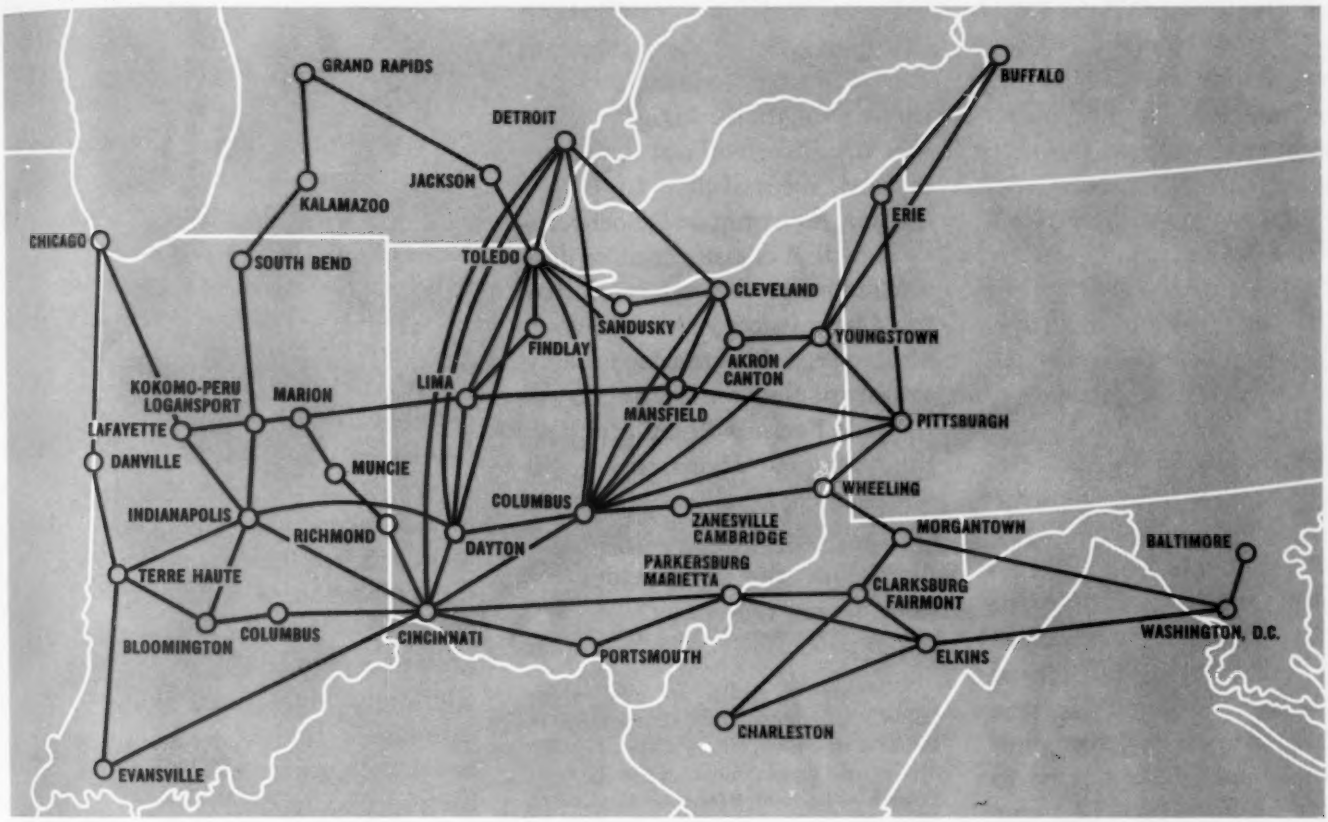
The Commission's attitude toward selective credit controls is a sensibly pragmatic one. It recognizes that general controls have selective effects and is willing to accept deliberately selective controls if they will contribute to effective stabilization policy and are feasible from an administrative point of view. The Commission was divided on the issue of consumer credit controls, much of the opposition apparently being due to concern about problems of administrative enforcement; its only recommendation is that an effort be made to devise methods of control that can be effectively administered. The Report also suggests that the government investigate possible selective devices for controlling business spending on plant and equipment and inventories, since these expenditures are important destabilizers and are not effectively controlled by general monetary policy.

Residential construction activity has behaved in a distinctly countercyclical manner during much of the postwar period, expanding in recessions and contracting in booms. Undoubtedly, this desirable pattern of behavior has been largely due to the marked stickiness of mortgage interest rates, which has caused the supply of mortgage money to decline when other interest rates rise and to increase when they fall. The existence of legal ceilings on interest rates on FHA-insured and VA-guaranteed mortgages has contributed significantly to the relative rigidity of mortgage rates. The Commission concedes that part of the countercyclical variation in residential construction has been due to the interest rate ceilings.[7] Nevertheless, it favors removal of these ceilings and, to compensate at least partially for the resulting elimination of countercyclical effects, it proposes that the terms (that is, downpayments and maturities) under the FHA and VA programs be varied by these agencies so that they support the stabilization policies of the government.

With respect to the tools of

[6] Very occasionally the Report refers to "evidence" bearing on a certain point, without disclosing the nature or sources of these bits of evidence. The reader of such a report should be given the opportunity to evaluate the evidence for himself.

[7] My own guess—and guesses are all that anyone can make in this area—is that if it had not been for the interest rate ceilings, housing expenditures would have shown the kind of procyclical variation—expanding in booms and contracting in recessions—that has characterized other categories of private expenditures.



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general credit control, the Commission favors primary reliance on open market operations, proposing that the "bills only" policy be abandoned and that the Federal Reserve try to influence long-term interest rates directly. It concludes, quite correctly in my opinion, that the operations of nonbank financial intermediaries have not significantly weakened the cyclical effectiveness of monetary policy and that there is no need to extend Federal Reserve controls to these institutions.

In the field of debt management, the Commission favors the orthodox view that the debt should be lengthened in times of inflation and shortened in recessions and argues that little importance should be attached to Treasury interest costs. I believe this is a mistaken notion; the Treasury is likely to find it both so expensive and so difficult to market longer-term securities in times of inflation and tight money that the effort will not in fact be pressed successfully. In consequence, the volume of short-term debt will increase more or less continuously—the very result that the Commission wants to avoid. Moreover, debt extension is likely to disrupt the continuity of a restrictive Federal Reserve policy, thus doing more harm than good. On balance, I believe it is desirable to place some moderate emphasis on the lengthening of debt during recessions.[8]

[8] This view is spelled out in some detail in W. L. Smith, *Debt Management in the United States*, Study Paper No. 19, Study of Employment, Growth, and Price Levels, Joint Economic Committee (Washington: U.S. Gov't Printing Office, 1960).



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POLICY MIX

One of the most notable features of the Report is its explicit acceptance of two theses: (1) that, within limits at least, it is possible to achieve a specified level of aggregate demand with various combinations of tax, expenditure, and monetary policies; and (2) that, by choosing the appropriate combination, it may be possible to exert a significant influence on the allocation of resources among consumption, private investment, and government services. Thus, for example, if the government wants to accelerate the pace of economic growth, it may be able to do so by adopting a tight fiscal policy to generate a budget surplus and using the surplus to retire debt, thereby making additional funds available to the capital market to finance private investment. The existence of liquidity preference will, of course, mean that not all of the funds put into the capital market in this way will ordinarily go into investment. Accordingly, the Commission recognizes that the success of such a growth-oriented policy may require that the debt retirement be supplemented by measures to ease credit on the part of the Federal Reserve or perhaps by special tax incentives (such as accelerated depreciation or investment credits) in order to ensure that the additional investment will be forthcoming. Indeed, it is pointed out that at times it may not be possible to stimulate investment sufficiently by any of these means. Consequently, a policy of budgeting for surpluses in order to encourage investment in the interest of more rapid growth must be used cautiously lest it prove abortive and lead merely to inadequate aggregate demand and unemployment.



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The Commission's view, in essence, is that the selection of the appropriate combination of tax, expenditure, and monetary policies is a political decision that should be made with a view to balancing the social benefits at the margin of additional consumption, government services, and investment, while at the same time maintaining the appropriate level of aggregate demand. The limited substitutability of one measure for another must, of course, be borne in mind.[9] This provides a basic framework within which short-run adjustments in monetary and fiscal policy must be made for countercyclical purposes.

Since the Commission takes the position that the burden of the public debt is not an important problem and since the size of the budget deficit or surplus even under full employment conditions is determined by the decisions concerning policy mix, the Report is refreshingly free from the philosophizing about the need to balance the budget that usually characterizes documents of this kind.

As far as countercyclical fiscal policy is concerned, the Commission likes automatic stabilizers but thinks the possibilities for strengthening them are rather limited unless some kind of formula flexibility can be introduced, a matter that, it feels, deserves further investigation. Perhaps the most important recommendation in the whole Report, however, is the proposal that the President be given limited conditional authority to make temporary countercyclical changes in the first-bracket rate of the personal income tax. If adopted, this recommendation would give us a new countercyclical weapon that is both powerful and flexible. In addition, the Report suggests enactment of expenditure programs for useful projects for a number of years in advance, with executive discretion as to timing for countercyclical purposes. Efforts to increase the cyclical flexibility of state and local government expenditures, possibly by means of an adjustable system of short-term federal grants, are favored. Thus, the arsenal of countercyclical devices would include discretionary monetary policy, automatic fiscal stabilizers, discretionary adjustments in the first-bracket personal income tax rate, executive discretion in the timing of certain public expenditures, and perhaps some selective controls. The combination of policies to be employed would depend on the nature of the particular situation.

[9] The Commission also recognizes that public investment, including outlays for services (such as payment of teachers) and for research and development as well as the acquisition of durable assets, may contribute to economic growth, and it recommends that these activities be emphasized.

ADMINISTRATIVE ARRANGEMENTS

The Commission's key recommendations with respect to reorganization of the Federal Reserve System are: (1) that all credit control powers be vested in a board of governors reduced to five members serving staggered ten-year terms with one member to be appointed every two years; and (2) that the chairman and vice-chairman of the board should be designated by the President from among the board's membership and serve for a four-year term coinciding with that of the President. Thus, a new President would have an opportunity to appoint one new member, but the language suggests that this member could not be made chairman. In fact, the President would apparently have no assurance of having a chairman in agreement with his economic philosophy and program unless and until he was re-elected for a second term. If effective policy coordination is to be achieved, at the very least the President should be completely free to select the chairman and vice-chairman of the board. My own opinion is that the board should be replaced by a single administrator to serve at the pleasure of the President. Nobody argues that the State, Treasury, or Defense Departments should be administered by an "independent" board, and I believe this kind of administration is calculated to lead to divided responsibility and confusion in the case of monetary policy.

In order to encourage better policy coordination between the Federal Reserve and other agencies, the Report suggests that the language of the Employment Act be amended to include price stability and growth specifically among its objectives and that exactly the same mandate be introduced into the Federal Reserve Act as a guide to System policy. With regard to the overall coordination of stabilization policy, the Commission has little faith in the utility of formal machinery, and its recommendations are accordingly rather modest. It proposes that whenever, in his judgment, the objectives set forth in the Employment Act are not being achieved satisfactorily, the President should be required to issue periodic reports indicating his assessment of the situation, the actions being taken to meet it, and recommendations for any Congressional action he thinks advisable. The purpose of this

proposal is to sharpen the responsibility of the President for the performance of the economy and to put pressure on him to act promptly to prevent or correct departures from the objectives of the Employment Act. The Commission also suggests that the President set up an advisory board consisting of appropriate key officials in the administration to serve as a coordinating agency on economic policy. There would be no statutory basis for this board, and the details of membership, activity, and selection of a chairman would, of course, be matters for the President to decide.

In my opinion, the Commission's proposals with respect to the administration of stabilization policy are quite inadequate. Having swept the conflict between price stability and full employment under the rug in Chapter 2, the Commission has thereafter disregarded this most controversial source of policy conflicts. If, as I expect, we continue to be confronted from time to time with cost-push pressures on the price level, measures other than orthodox monetary and fiscal policy—ones that may involve some rather unpleasant intervention in the machinery for fixing wages and prices—will need to be adopted or else the authorities will find themselves unable to achieve predetermined price stability and employment objectives simultaneously and will be forced to judge what the "trade-off" is between the two objectives and choose weights to attach to each of them in order to decide what policies to adopt. Under these conditions, coordination and reconciliation of conflicting objectives become very important; in particular, a situation in which an "independent" Federal Reserve has one view of the "trade-off" function and set of weights while the Administration has another is absurd and intolerable.

WHILE I think it is most unfortunate that the Commission has chosen to take the ostrich approach to what I feel is the most important problem within the scope of its study, I do believe that the Report contains many useful suggestions. I am especially pleased that the Commission has chosen to recognize the interdependence and partial substitutability of tax, expenditure, and monetary measures and to emphasize the possibilities of accelerating growth by selecting the proper policy mix. However, the Report contains very little new evidence to help us settle controversial issues, and I venture the guess that its immediate impact on economic policy will be somewhat limited.

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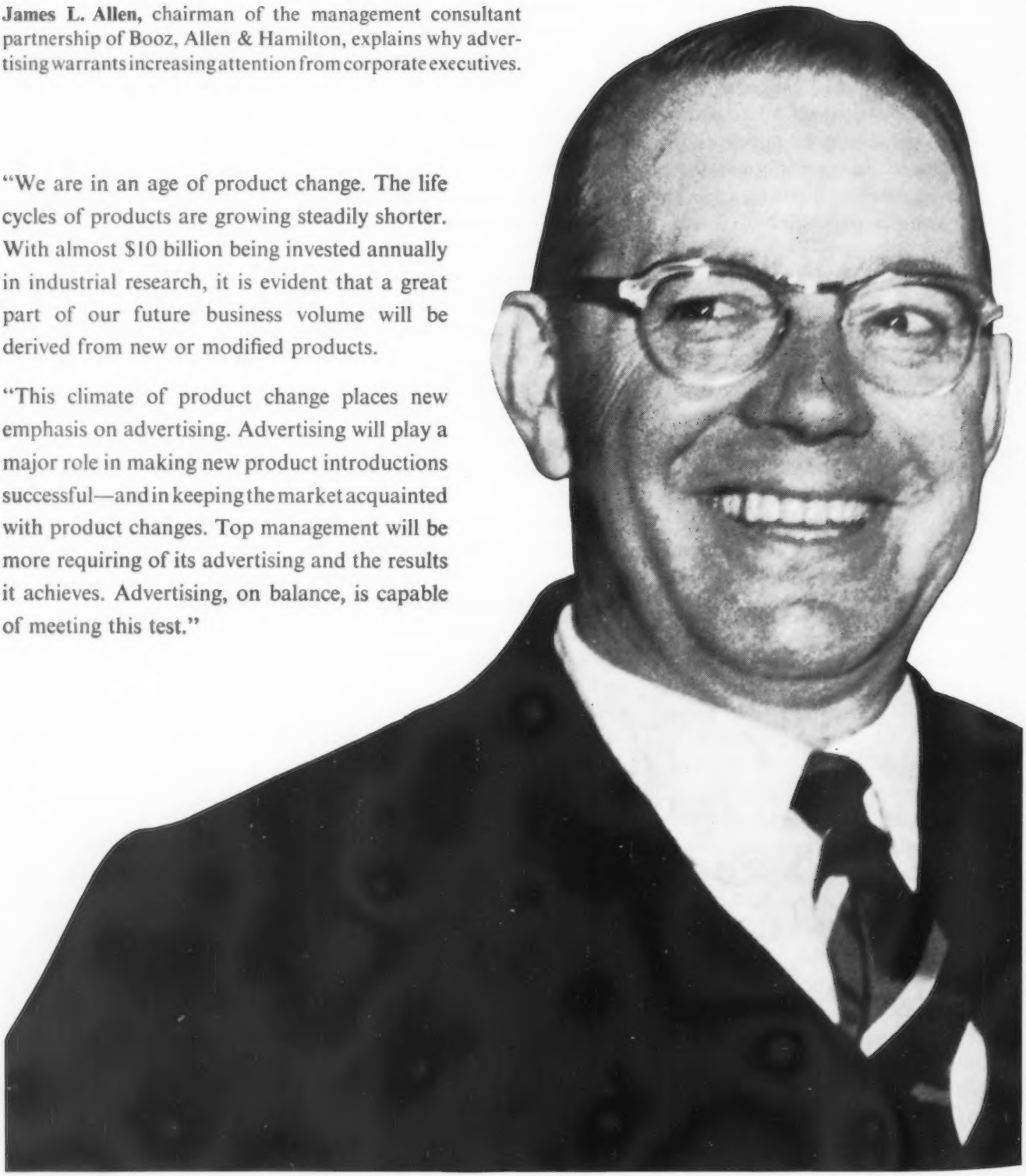
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MORE ON THE MARXISTS

To The Editors:

The article "Six Visiting Marxists Meet U.S. Business" by Professor Stefan H. Robock [*Business Horizons,* Spring 1961] is a useful summary of their experiences and is in close accord with my own brief visit with them.

The importance of government in the U.S.A. is denied by no one; but the article makes a number of needless and perhaps erroneous concessions, even though the author is quite right in stressing the importance of balanced presentations.

For example, the article states that [U.S.] "business spokesmen failed to explain the dominant contribution of government home financing programs" when discussing our vast postwar rehousing. But in terms of deflated GNP and population, the rate of new housing starts in 1925 and 1926 exceeded the figures for 1955 and 1956.

Again, the article states business presentations overlooked "the fact that government has stimulated and is paying for more than half our national research and development effort." The implication here is that the government has money of its own, whereas it first took this money from taxpayers and then channeled it into R & D. Even so, the "more than half" is a dubious conclusion.

Again, the article states that most business groups ". . . except the CED had bitterly opposed government efforts to establish . . ." automatic stabilizers—social security, unemployment insurance, and securities regulation. Actually, when these programs were put on the legislative books, the CED did not exist. Furthermore, does not the conservative and the critic of proposed political innovations perform an essential function?

The Marxists' charges of the lack of consumer sovereignty in the U.S.A. due to advertising, etc. are reported by Professor Robock and left standing without any reservation or evaluation.

Similarly, a Marxist's resurrection of the old canard that, under our system, production for profit is not matched by consumer satisfaction is left to stand; just how the producers under free enterprise can profit without concurrently satisfying willing buyers would merit a short explanation, if true.

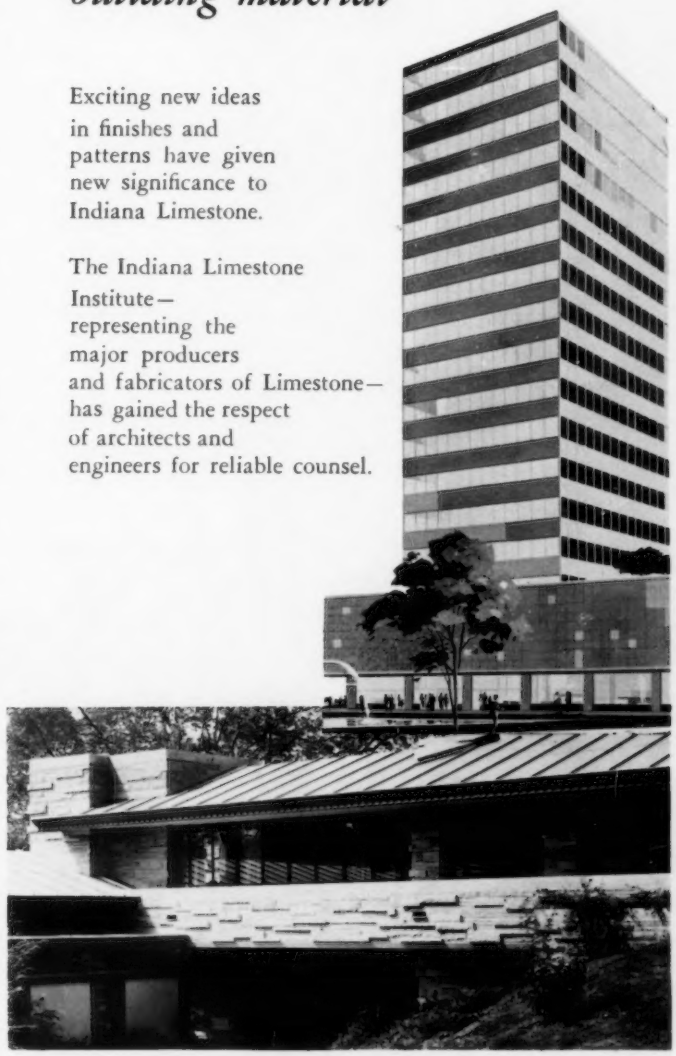
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EMERSON P. SCHMIDT

Director, Economic Research
Chamber of Commerce of the
United States
Washington, D. C.

A VIEW OF MOTIVATION

TO THE EDITORS:

F. E. Kast in his excellent philosophical approach toward "Motivating the Organization Man" [*Business Horizons*, Spring, 1961] emphasizes that management should not only rely upon monetary rewards, fringe benefits, and employment security, but should take the responsibility for total fulfillment of employees' needs.

Business reality today shows that the profit motive, not necessarily calculated in monetary units, is the criterion, the characteristic, and the constituent of all efforts in the continuous struggle of achieving business objectives. As life itself is a total of efforts for satisfying needs, life in a company is for the Organization Man a substantial part of it, that important part which gives him the means of satisfying the other needs that motivate man's behavior.

We agree then with Mr. Kast that management "should give recognition to the higher-level needs," but we must admit that the objective of a company is to produce products or services through motivation of the Organization Man by creating the necessary climate for better human relations within the enterprise; the recognition of his needs is a means for a better job, not a business objective. Management, therefore, should show a greater interest in the satisfaction of all the basic needs of man, but not totally fulfill all his needs. It is a wrong approach to consider an industrial company a philanthropic institution or a "social welfare" organization.

In order to justify this point, we can say that one of the main reasons why most companies in the underdeveloped countries ignore completely what we term "industrial sociology" is that employers pay more than 60 per cent on salaries and wages for social insurance, special taxes, and so forth, and cannot afford to fulfill all the needs of their employees. But even if no financial problem is involved, it is necessary not to forget that in the results of all efforts for cost reduction and more profits, the stockholders and the consumers, as well as the Organization Man, must have their equal share. So, any motivation scheme must be formulated under these considerations and within the framework of the company policy.

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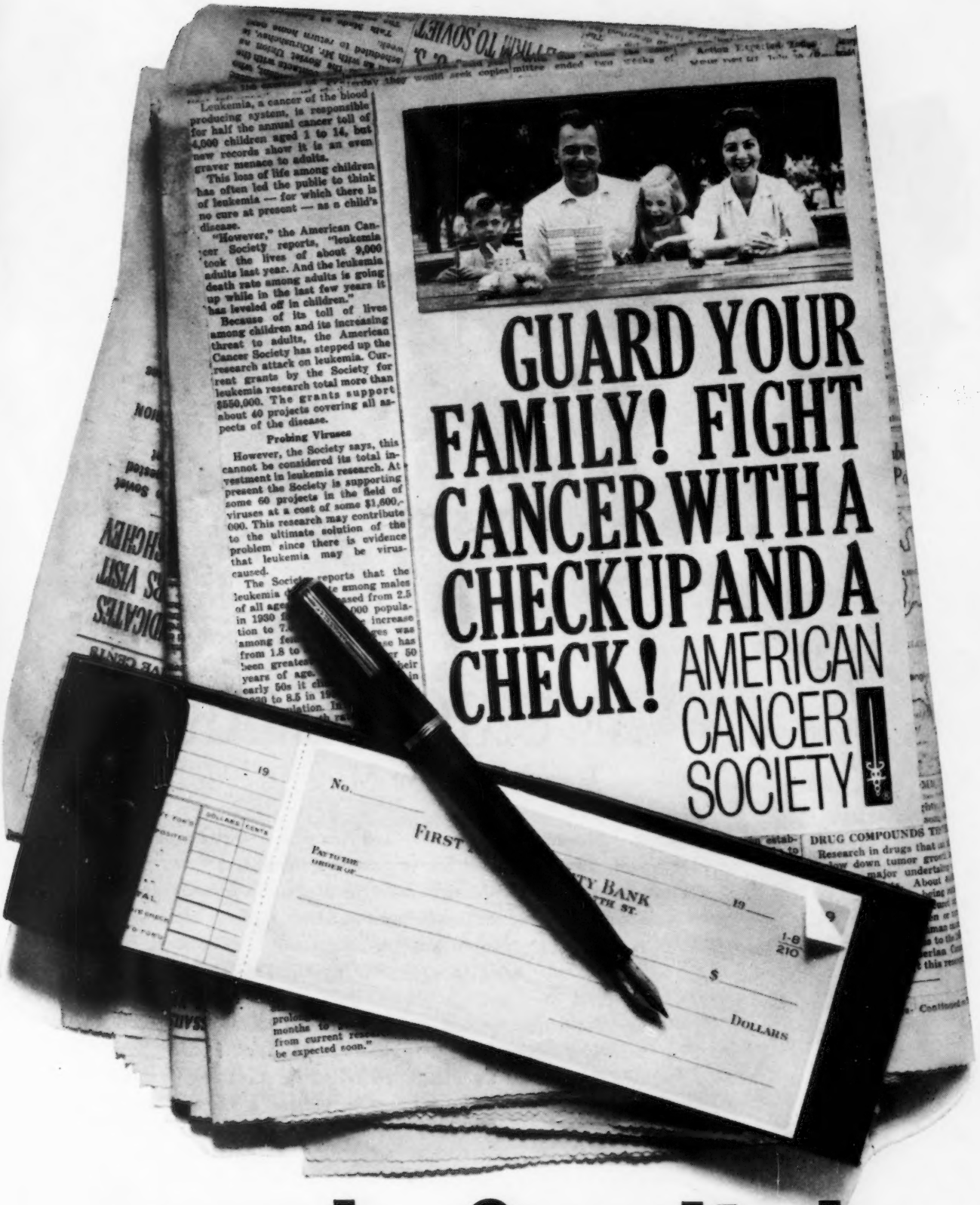
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The Brand Image Myth

THE AIM of this article is frankly iconoclastic. I am skeptical of brand imagery. I think it is vulnerable on both theoretical and empirical grounds; its claims are not consistent with accepted theories of consumer behavior; and, further, there is no real evidence to support it.

Motivation researchers, those who have turned to the behavioral sciences for an understanding of the consumer's actions and thoughts, have in recent years concerned themselves with brand imagery. Indebted to Freud for the theory that motivation often lies at an unconscious level of the mind, they believe that consumer motivation can be explained by the psychological characteristics of either the user or the product itself. Thus, brand selection is seen as a means of satisfying deep inner psychological needs, and the brand image—"the total set of attitudes, the halo of psychological meanings, the association of feeling, the indelibly written esthetic messages over and above the bare physical qualities"[1]—is what people are thought to purchase rather than any reality.

With this theory of consumer motivation, marketing research becomes a search for symbols that sell. Motivation researchers use brand images to describe product personalities and to divide large generic product markets into homogeneous brand segments. They claim that brand images have the same effects upon large groups of people and that these effects are measurable by their specialized techniques. Implicit in these claims is the idea that the marketing manager can manipulate the brand image—his primary concern—through advertising, packaging, and product design.

Mr. Evans is Assistant Professor of Marketing, Graduate School of Business, University of Chicago.

[1] Pierre Martineau, *Motivation in Advertising* (New York: McGraw-Hill Book Co., 1957), p. 146.

THE CHARGES

I propose to question brand images on five grounds:

1 Brand imagery, in my opinion, is inconsistent with current psychological theory.
2 Motivation researchers have used several different definitions for images. The results are often contradictory.
3 Brand images have not been related to the correct purchasing population.
4 Brand image theory is inconsistent with respect to how long images last or what changes them.
5 The methods of image assessment used by motivation researchers provide poor or inexact measurement.

After considering each of these charges, I want to describe in some detail one test of my own that illustrates most of these points and contradicts the motivation research findings in the area. Finally, I would like to suggest some new approaches to marketing research that I feel will prove more fruitful than brand imagery.

Motivations and Psychological Theory

Image theory implies that unconscious motivations are important in brand choices and that a product's image is the same to the bulk of its consumers. Popular though this view is, there is little real evidence to support it. Most motivation research studies have been based on small nonrandom samples, and images have not been shown in quantifiable terms.

Brand imagery suggests that everyone is alike as far as inner motivations are concerned. The product with a strong masculine image should appeal to all men who value masculinity since the product image is said to satisfy this personality need. However, a great deal of current psychological theory suggests that a personality need is important only when it is not satisfied. When one need is temporarily satisfied, another need comes to the fore. Moreover, the means of need satisfaction may change from one instance to another. A person may satisfy his oral needs, for example, by eating, smoking, chewing gum, or even kissing his wife. There is no theoretical reason to believe that consumers will choose the same brand to satisfy the same need, nor that they will necessarily be consistent in their individual patterns of need satisfaction.

Leon Festinger's theory of cognitive dissonance suggests that, to be effective, appeals of all kinds must match the individual's predispositions.[2] If individuals' predispositions to brands vary, the image will not be the same to all, no matter how hard the manufacturer tries to communicate a unified picture.

Definitions of Brand Images

Brand images are described as "all things associated with a product or perceived about it." In some unspecified way, the image is thought to result from three distinct forces: (1) because of its design or physical qualities, a certain brand may be better suited to some particular uses or users than competing brands; (2) the manufacturer through his advertising tries to create the impression that his brand is best for certain uses or kinds of people; (3) a brand is associated with the kind of people one observes using it.

Advertising agencies have stressed the second of these, motivation researchers the third.

Out of these forces, five distinct and often conflicting kinds of brand image have been created:

1 The image may be a simple statement of the product's physical or objective qualities. That the Buick Special is a higher-priced compact automobile than many of its competitors is an example of such a claim. This kind of image is no more than a statement of reality; consequently, it does not fit the usual brand image usage.

2 In certain instances, the image may make reference to the Freudian symbolism of the product's design. Automobiles, for example, are said to be symbols of male potency.

3 The user's personality is associated with a certain brand, as in "Thinking men smoke Viceroys."

[2] Leon Festinger, *The Theory of Cognitive Dissonance* (Evanston, Ill.: Row, Peterson & Company, 1957).

4 Alternatively, the brand is associated with a particular individual or group without specifying either direction or meaning to the relationship. This approach is exemplified in the television commercial that features Marshal Dillon of Dodge City as a smoker of "L & M" cigarettes.

5 Yet another possibility is to give the brand a distinct personality of its own that selects the users. "Marlboro," for example, is said to be a very masculine cigarette.

Each of these five kinds of brand image could result in different and contradictory marketing strategy. The first, statements of reality, is obviously the most important, but seldom enters into image studies. The others refer to psychological attributes of the product or its users. Very little is known about how these really affect purchase behavior. For instance, a product that has an aggressive personality is not the same as a product for aggressive users. In fact, the two products might attract opposite kinds of users.

The image dilemma of the automobile manufacturer illustrates many of these problems. Automobiles are said to be important symbols of youthfulness. If the manufacturer accepts the desire to appear youthful as a motivating factor in brand selection, he must then decide what design factors make a brand appear youthful to his potential customers. Should the car be shown only with youthful people in his advertisements (image by association)? Or should the product be shown with older people, who, it is implied, are recapturing youth through the purchase of his brand (image of the product)? Moreover, what does the term "youthful" mean to the relevant market? Within broad limits, youthfulness is a relative characteristic; the frame of reference changes with the individual's own age.

The Relevant Purchasing Population

Image studies are based on the erroneous assumption that almost everyone is a potential customer. In fact, few products appeal to everyone, and most markets can be broken down into segments where only a few brands really compete for consumer acceptance. The opinions of those outside a brand's segment are not relevant to the image problem. College professors' attitudes toward the Rolls Royce are immaterial for product or communication strategy. Few will ever be in the position to purchase one.

The widely quoted *Chicago Tribune* automobile image study, for example, was based on 352 interviews—60 of which were with people who did not even own a car.[3] Results are also distorted by using broad product classes rather than competitive brands. Ford, Chevrolet, and Plymouth compete with each other, not with Lincoln, Cadillac, and Chrysler. The use of pooled samples produces a bias in favor of the opinions held by owners of the more popular brands. In the automobile market, income is far more likely to determine choice between the low-, medium-, and high-priced brands than the various brand images.

Furthermore, views about products are modified once the purchase is made. Purchase is a form of public commitment—a declaration of one's belief that the product is a good one. Therefore, brand image statements are meaningless unless the brand owned by the respondent is also taken into account. A true image exists only if both owners of a certain brand and nonowners have a common view; the evidence, however, does not indicate that this often happens.

Images Over Time

Brand images are thought to evolve, and to extend beyond changes in the physical product. Once created, they are said to be difficult

[3] The study was made in 1954 for the *Chicago Tribune* by Social Research, Inc. It has been published in: Pierre Martineau, *Motivation in Advertising* (New York: McGraw-Hill Book Co., 1957); Malcolm P. McNair and others, *Problems in Marketing* (2d ed.; New York: McGraw-Hill Book Co., 1957); Joseph W. Newman, *Motivation Research and Marketing Management* (Boston: Harvard University, Grad. School of Bus. Admin., Div. of Research, 1957); and Robert Ferber and Hugh G. Wales, eds., *Motivation and Market Behavior* (Homewood, Ill.: Richard D. Irwin, Inc., 1958).

to change; Ford, for example, is still supposed to carry "Tin Lizzie" connotations. However, no investigation has been made into how long an image lasts or how much effort is needed to change it.

Motivation researchers have often expressed contradictory views in this area. Pierre Martineau of the *Chicago Tribune* has said, "We have just completed a used car study which shows that the used car buyer makes little distinction between makes of automobiles."[4] It seems unreasonable to say that images explain the purchase of a new car, but exert no influence over used car buyers. Moreover, if images were long lasting and all-important, there would be little comparison shopping. In my study of Ford and Chevrolet owners, over 70 per cent of the sample shopped more than one dealer before buying, and almost half shopped brands other than the one they bought.[5]

Image Measurements

The techniques of image measurement are neither refined nor standardized. The following three methods, all of them subject to serious limitations, are the most commonly used: (1) personality profiles of owners taken from brief psychological tests; (2) interpretation of material from unstructured (depth) interviews; and (3) adjective check lists from which respondents are asked to choose the words best describing certain brands.

To assess owners' personalities, motivation researchers have used both simple objective personality tests and unstructured projective tests like the Rorschach ink blots and the TAT pictures. The entire area of personality testing is too fraught with controversy to generalize upon the subject.[6] Research, moreover, has not shown projective tests to be superior to simple objective ones.

Even if we ignore the problems of sample selection, the reliance upon depth interview data is still unwarranted. Interviewers are seldom either psychologists or trained social scientists, and the dangers of interviewer bias are great. The nature of the interview, moreover, requires the researcher to "distill" the truth from a written report at some future time. He lacks both the environmental clues present in the field situation and the opportunity to probe for further information.

The third method of assessing brand images is the use of adjective check lists. Respondents are presented with a long list of adjectives and asked to select those that best fit a particular brand. This method is fraught with dangers. First, the connotations of most of the adjectives are not the same to all respondents. "Thrifty" may represent a positive value to some and a negative value to others; a commonly used adjective like "practical" may mean the very best quality to some but be just barely acceptable to others.

Second, the descriptions of various brands often contain many overlapping adjectives; at best, this blurs the issue. Also, the adjectives used often do not represent independent measures. The presentation of a long list of synonyms does not prove that an image exists.

Third, the longer the list of adjectives, the greater the opportunity of finding a few related to a particular brand. A check list of ten adjectives may show no differences at all, but due to chance alone one is likely to find ten that do show a difference if they are selected from a list of 200 and the other 190 are ignored. This can be illustrated by flipping a fair coin 200 times and recording the answers, heads or tails, in groups of ten. By looking at the total array and then picking out those that show long runs of heads (or tails) one can easily select several groups that "prove" the coin is biased. This kind of picking and choosing is, of course, meaningless. One must look at the whole array of answers to make a correct judgment. For adjective check lists to be meaningful the choices of all respondents for

[4] *Advertising Age* (December 21, 1959), 76.

[5] Franklin B. Evans, "Psychological and Objective Factors in the Prediction of Brand Choice: Ford Versus Chevrolet," *The Journal of Business*, XXXII (October, 1959), 340-69. For comment on this study, see articles by Steiner, Winick and Evans, *The Journal of Business*, XXXIV (January, 1961), 57-73.

[6] Robert R. Blake and Jane S. Mouton, "Personality," in Paul R. Farnsworth, ed., *Annual Review of Psychology*, X (Palo Alto, Calif.: *Annual Reviews, Inc.*, 1959), 226.

each adjective should be given. Unfortunately, this almost never happens in practice.

AUTOMOBILE STUDY

During the past twenty-five years, Ford and Chevrolet have shared about half of the automobile market. In an economic and utilitarian sense, the cars of the two companies are virtually interchangeable. Prices, models, service facilities, and other features are all comparable. Motivation researchers, however, have described the owners of these two makes of car as being entirely different and have used images to explain consumer choice. A composite description would show the Ford owner to be independent, impulsive, masculine, self-confident, and alert to change, and the Chevrolet owner to be thrifty, conservative, prestige conscious, less masculine, and seeking to avoid extremes.

To test for image differences between these two brands, I conducted the study referred to above, using 146 Ford and Chevrolet owners in Park Forest, Illinois. The owners were selected by a completely random process, and the study was limited to owners of 1955-58 models for three reasons: (1) to minimize the effects of the brands' style cycles; (2) to include model years in which each was the top seller nationally; and (3) to measure the success of the $225 million of advertising spent on these two brands alone in creating images. All respondents were white males and owned only one car; they were given a psychological test to appraise their personalities and were asked a series of image questions concerning the two brands.

Owner Personality Images

The psychological test consisted of items taken from the Edwards Personal Preference Schedule, one of the better-known paper and pencil tests.[7] The test measures the following personality needs:

[7] Allen L. Edwards, "Edwards Personal Preference Schedule," (New York: The Psychological Corp., 1957).

TABLE 1

Average Personality Need Scores, Ford and Chevrolet Owners

	Ford (N=71)	Chevrolet (N=69)	Difference
Achievement	12.80	12.87	−0.07
Deference	9.47	9.77	−0.30
Exhibition	10.06	9.30	+0.76*
Autonomy	7.86	8.80	−0.94*
Affiliation	10.14	11.09	−0.95*
Intraception	11.17	11.32	−0.15
Dominance	13.69	12.41	+1.28†
Abasement	7.20	7.28	−0.08
Change	11.39	11.06	+0.33
Aggression	9.59	9.52	+0.07
Heterosexuality	6.63	6.59	+0.04

* Significant at 10 per cent level (two-tailed test).
† Significant at 5 per cent level (two-tailed test).

Achievement—To do one's best. To accomplish something of great significance.

Deference—To find out what others think. To accept the leadership of others.

Exhibition—To say witty and clever things. To talk about personal achievements.

Autonomy—To be able to come and go as desired. To say what one thinks about things.

Affiliation—To be loyal to friends. To make as many friends as possible.

Intraception—To analyze one's motives and feelings. To analyze the behavior of others.

Dominance—To be a leader in the groups to which one belongs. To tell others how to do their jobs.

Abasement—To feel guilty when one does something wrong. To feel inferior to others in most respects.

Change—To do new and different things. To participate in new fads and fashions.

Aggression—To attack contrary points of view. To get revenge for insults.

Heterosexuality—To become sexually excited. To be in love with someone of the opposite sex.

The test scores indicate very little personality difference between Ford and Chevrolet owners (see Table 1).

Although some small differences on need scores are shown, they are not large enough to provide separation between the brands. In other words, the differences between mean scores for different needs are much larger

than the differences between Ford and Chevrolet means for the same need. Moreover, the differences between Ford and Chevrolet means—even on "dominance," which showed the greatest separation—are of slight value for predicting a person's brand selection. The distributions of scores for all needs overlap to such an extent that discrimination is virtually impossible.

As these individual need scores failed to discriminate between the two groups of owners, a linear discriminant function was computed, using the scores for the first ten needs. The lowest scored need (heterosexuality) was dropped from this computation for statistical reasons. The discriminant function reduces the multivariate problem to a univariate one; in other words, scores for all ten needs are weighted and summed to select the group to which a person would be assigned. The resulting equation is written as follows:

$$Y = aX_1 + bX_2 \ldots kX^k$$

The X_1, X_2, . . . represent the independent variables (personality need scores) and the a, b, . . . k, their optimum weighting. This equation did not provide effective separation of Ford and Chevrolet owners. When the equation was applied to the data from which it was developed, it misclassified almost two-fifths of the owners.

All the evidence points to the conclusion that an individual's personality needs, as measured in this study, are of little value in predicting whether a person owns a Ford or Chevrolet automobile. People within a common social class have different personalities; their personalities, however, do not appear to be systematically related to their choice of the two most popular brands of cars. Images, it appears from the study, did not exist in the sense of the market being segmented according to distinct personality types.

Other Image Measurements

To test for images associated with the brands, respondents were given the following instructions and twenty-one brief descriptions:

"We often think of cars as especially suitable or unsuitable for different kinds of people. For example, it seems odd for a very big man to drive around in a very small car. I'll describe some people for you and I'd like you to tell me if a Ford or Chevrolet would be a better car for each of them. Even if you think any car will do, name the one that comes closest in your opinion, in any way."

He likes to solve difficult problems, always does his best.

He always gets advice from others before buying anything.

He's always telling jokes and using big words.

He does whatever he pleases, doesn't like to conform.

He is really loyal to his friends.

He likes to observe others and understand how they feel.

He wants to be the boss, to supervise others.

He likes to be punished when he's wrong.

He likes to travel and to meet new people, enjoys change.

He thinks he is physically attractive to women.

An aggressive driver, always first away from the light.

He's an athlete—a very masculine type.

In picking a job, he looks for security.

You can tell he's a college boy.

He is very self-confident.

He's a very cautious driver, has never had a ticket.

The best car for a woman.

You can tell he's a successful man.

He loves his car, tinkers with it all the time.

He is a very dignified and reserved gentleman.

Everything he owns is the latest style.

There was agreement by both groups of owners on only five of these twenty-one descriptions. The Ford owner is pictured as a nonconformist, an aggressive driver, the type who loves his automobile, or a college boy. The Chevrolet owner is pictured as a very cautious driver. The percentages ascribing the descriptions to each brand are shown in Table 2.

Seven descriptions were attributed by each group to their own brand. Obviously, these represent positive values to both groups. Both Ford and Chevrolet owners believe their

TABLE 2

Owner Descriptions Representing Consensus by Ford and Chevrolet Owners

Social Image	Percentage of Combined Sample (N=144)	Percentage of Ford Owners (N=70)	Percentage of Chevrolet Owners (N=74)
Ford owner			
Nonconformist	66.0*	68.6*	63.5*
Aggressive driver	77.8*	72.9*	82.4*
College boy	67.4*	65.7*	68.9*
Loves his car	64.6*	61.4*	67.6*
Chevrolet owner			
Very cautious driver	77.8*	64.3*	90.5*

* Reject null hypothesis at 5 per cent level of significance (test figures carried to four decimal places).

brand is best for the person who likes to solve difficult problems, is loyal to his friends, likes to observe and understand other people, likes to be punished when wrong, likes to travel and enjoys change, is very self-confident, is a successful man. With the exception of the wish to be punished, these are socially desirable traits. The percentages of owners assigning the seven images to their own brand are shown in Table 3.

The other nine descriptions showed views held by only one group of owners. Ford owners pictured themselves as athletic and owning things of the latest style; they saw Chevrolet owners as seeking advice from other people. Chevrolet owners saw no differences between the brands on these three factors. Similarly, the Chevrolet owners held views that the Ford owners did not attach to either brand. Chevrolet owners saw the Chevrolet as best for a woman, for a dignified gentleman, or for a person desiring job security. They saw the Ford owner as always telling jokes, wanting to be boss, and thinking of himself as physically attractive.

Owner Personality and Brand Descriptions

This weakness of brand images for Ford and Chevrolet suggests that what is commonly thought of as a brand image is a function of the individual's particular personality. The first

TABLE 3

Percentage of Ford and Chevrolet Owners Attributing Owner Descriptions to Their Own Car

Social Imagery	Percentage of Ford Owners Answering Ford (N=70)	Percentage of Chevrolet Owners Answering Chevrolet (N=74)
Likes to solve difficult problems	65.7*	60.8*
Loyal to friends	74.3*	82.4*
Likes to observe others	60.0*	78.4*
Likes to be punished	58.6	58.1
Likes to travel	70.0*	67.6*
Self-confident	75.7*	66.2*
A successful man	62.9*	59.5

* Reject null hypothesis at 5 per cent level of significance (test based on figures carried to four decimal places).

eleven descriptions used in this study were taken directly from the explanation of the personality needs measured by the Personal Preference Schedule. The brand-image descriptions were made parallel to the personality needs so that the relationship between image and personality could be analyzed. The need-image pairings are as follows:

Achievement—He likes to solve difficult problems, always does his best.

Deference—He always gets advice from others before buying anything.

Exhibition—He's always telling jokes and using big words.

Autonomy—He does whatever he pleases, doesn't like to conform.

Affiliation—He is really loyal to his friends.

Intraception—He likes to observe others and understand how they feel.

Dominance—He wants to be the boss, to supervise others.

Abasement—He likes to be punished when he's wrong.

Change—He likes to travel, meet new people, and enjoys change.

Sex—He thinks he is physically attractive to women.

Aggression—An aggressive driver, always first away from the light.

Analysis of these pairs shows that whatever need an individual indicated was most important to himself, the corresponding image description was assigned to the car he owned far oftener than one would expect from chance alone—65.1 per cent of the time for the total sample. Thus, in almost two-thirds of the cases, the individual projects his greatest need into the brand he happens to have. In this sense, then, automobiles are extensions of the owner's personality; they are used to satisfy certain important personality needs. Owners believe their car fits their personality and ascribe it to people of similar needs. However, the lack of brand discrimination by the personality need variables also precludes discrimination on the basis of these brand-image projections. While individuals tend to project their own needs into their cars, the distribution of needs is similar for owners of each make.

If all the needs ranked in the top half of each individual's scale are considered, 61.2 per cent of these are attributed to the brand owned. Slightly more Chevrolet owners than Ford owners project their single greatest need into their car, but for the top five needs the pattern is reversed. Table 4 shows the percentages for each brand as well as the total sample.

TABLE 4

Percentages of Individuals Projecting Personality Needs into Car They Own

	Ford Owners (Per Cent)	Chevrolet Owners (Per Cent)	Combined (Per Cent)
Single greatest need projected into own car	62.1	68.2	65.1
Five greatest needs projected into own car	64.2	58.0	61.2

Conclusions from Study

This study of the two best advertised and largest selling automobiles indicates that either images do not exist for these brands or that they are not meaningfully related to purchase behavior. Neither images attributable to the product nor images due to personality differences of the owners could be found. Under these circumstances, image exploitation would be difficult.

From the standpoint of marketing strategy, this study highlights the difficulties involved in segregating the customers of one brand from those of a similar and competing one. Popular brands appeal to different kinds of people for many different reasons. What motivates these customers is not readily apparent. By definition, a brand image could not attract opposite kinds of people; an image must be consistent. Even with some product variation, it may be impossible for a manufacturer to create several distinct images. Within a brand family, there are carry-overs from their common heritage. Moreover, to try to create several images rather than a single one may cause a "scattering" of promotional effort and leave a manufacturer open to the inroads of competitors.

This study suggests that many of the assumptions commonly held in marketing about brand images are either wrong or misleading. The evidence points neither to strong images attracting definite kinds of people nor, specifically, to the use of automobiles for satisfying deep inner needs in symbolic terms.

In promoting a brand, it would appear safest to be somewhat ambiguous with regard to both personality and objective variables. People of all kinds are customers, and creation of too strong an image in certain personality terms may narrow one's market unnecessarily. If the image is ambiguous, there is a tendency for customers to read into it what they want and to attribute what they value highly to their own brand.

NEW DIRECTIONS

The major function of marketing research is to isolate the manipulative variables associated with the purchase of a given product. The goal is market exploitation. The foregoing

analysis suggests that brand images, as used by motivation researchers, do not achieve this goal.

Marketing suffers from a lack of any theory of its own. It is an applied field and must draw heavily on the social sciences. While it is impossible to take a truly eclectic view, drawing the best from all the social sciences, at least three areas appear more fruitful than brand imagery: (1) small group theory in sociology; (2) role theory in social psychology; and (3) more refined statistical analysis of traditional economic and objective variables associated with brand purchasers.

Small Group Theory

Small group theory emphasizes the importance of interpersonal relationships. Almost all people are members of several small primary groups, such as the family, friends at work, at church, or in the neighborhood. All of these small groups influence the individual's actions. To study the individual without reference to other people with whom he associates is to overlook a major influence on behavior. The more the individual values the group, the greater his need to conform to its standards or norms. Sociological studies have shown how group membership governed farmers' adoption of hybrid seed corn,[8] women's everyday grocery purchases,[9] and physicians' choice of a new antibiotic.[10]



The primary task for small group research in marketing is to identify the group or groups relevant to different kinds of purchasing decisions. Some product standards may arise within the family, others may come from friends, neighbors or work associates, or even possibly dealers. Once the relevant group has been established, research can show how the manufacturer can reach the group with his communications, who within the group is the influential person in making brand decisions, and how the product can be tailored to fit the group norms.

Role Theory

Role theory is an interdisciplinary theory, drawing from studies of culture, society, and personality.[11] It is a formula in which the interaction of the self (the unit of personality), the role (the unit of culture), and the position (the unit of society) results in a system of role expectations. The role is a consistent set of responses by one person calling for similarly consistent responses by others. Each person's actions are then governed by his conception of his own role, what he thinks it brings out in others, and his conception of their roles.

Roles permit a person to realize the goals set by the groups he belongs to. More simply,

[8] Bryce Ryan and Neal C. Gross, "The Diffusion of Hybrid Seed Corn in Two Iowa Communities," *Rural Sociology*, VIII (March, 1943), 15-23.

[9] Elihu Katz and Paul F. Lazarsfeld, *Personal Influence* (Glencoe, Ill.: The Free Press, 1955).

[10] H. Menzel and E. Katz, "Social Relations and Innovation in the Medical Profession," *Public Opinion Quarterly*, XIX (1955-56), 337-52.

[11] R. R. Sarbin, "Role Theory," in Gardner Lindzey, ed., *Handbook of Social Psychology*, I (Cambridge, Mass.: Addison Wesley Publishing Co., Inc., 1954), 223-58.

the culture sets the patterns of action; the roles of the father, mother, teacher, and so forth are well defined by society.

Role theory has not been used in marketing research (as far as I know), but it suggests many important approaches to consumer motivation. Communications from a manufacturer should support a person's role to be successful; a person would not buy a product that was incompatible with his own role conception or purchase it from someone who did not fit his role expectations in the particular situation. Consumers also respond to the manufacturer's conceptions of their roles, that is, to how he depicts them in his advertising. The first step for marketing research would be to study how people's roles preselect the communications they expose themselves to and how different brands are used to express different roles.

Statistical Analyses

Finally, traditional forms of marketing research, especially refined statistical analyses of easily measured objective factors, are a long way from exhausting the possibilities of understanding consumer behavior. Motivation research has acted as if most behavior could be explained by single motives; it is more likely that many motives are involved. Purchase motives are often multidimensional, and there is room in marketing for a great deal of empirical research. We already have adequate sampling and measurement techniques to study most problems. Combinations of objective variables such as user's age, income, life-cycle stage, religion, geographic location, job, city size, other products owned, and so on may lead to better segmentation of the market.

Manufacturers may be forced to realize that they are selling to many small market segments rather than to one large common market. Once this is realized, both product and communication strategy can be tailored to fit these individual segments. Television may be the best medium for one class of customers while the door-to-door salesman is best for another. The use of electronic computers has greatly increased the horizons of this kind of research. Statistical problems that a few years ago seemed insurmountable are nowadays routine.

Marketing research is still a new field. The next decade should see some progress towards marketing's ultimate goal—supplying consumers with what they want.

PICTURES are not easy to look at. They generate private fantasies, they furnish material for jokes, they recall scraps of historical knowledge, they show landscapes where one would like to wander and human beings whom one would like to resemble or adore, but looking at them is another matter, yet they must have been painted to be looked at. They were intended to appeal to the eye, but almost as if it were gazing at the sun itself the eye often reacts by closing as soon as it catches sight of them. The mind takes charge instead and goes off on some alien vision. The mind has such a congenial time that it forgets what set it going.

—E. M. Forster

NOT LOOKING AT PICTURES

ROBERT F. MOORE

The Executive Matchmakers

A LOOK at the published figures and predictions of the Bureau of Labor Statistics reveals that another serious shortage of executive personnel will probably develop during the next five years. The reason for this shortage is the nation's low birth rate during the depression years. Whereas between 1960 and 1970 the postwar boom in births will have resulted in a 46 per cent increase in workers under 25 years of age and there will have been a 20 per cent increase in workers 45 and over, we are told that we can expect a decline in workers between the ages of 35 and 44.[1] It is from this last group that our future executives and administrators, our managerial and top technical and professional leaders must come.

[1] U.S. Department of Labor, *Manpower: Challenge of the 1960s* Washington: (U.S. Gov't Printing Office, 1960).

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We who are active in executive selection are frequently asked to select a seasoned young executive who has such qualifications as an M.B.A. plus five years in a specific function, five years' experience in a supervisory capacity, five years in middle management, and five years in top management. These desired requirements, employers seem to forget, add up to age 45 and over, the age bracket in which they too often have little interest. With the growing scarcity in the younger executive group, however, may come greater opportunities for the real "pros" in the so-called older group.

These conditions place a serious responsibility upon boards of directors, chief executives, and their counterparts in government and institutions and present a challenge to them to undertake immediately a program of man-power planning as an integral part of

their short- and long-range planning. Among the questions these men must face are: "Where will our future young executives come from and how shall we find and select them?" and "How can we better use the talents and experience of our older executives?"

As a partial answer to these questions, this article discusses executive recruiting and the contribution it is now making to the solution of executive man-power problems. In view of the impending executive scarcity, this activity may well become crucial to the growth of progressive enterprises and indispensable to their organization planning.

EXECUTIVE RECRUITING

Recruiting of executives has been carried out in one form or another as long as there have been executives. At one time, executive selection was little more than advancement of one's relatives. Occasionally, a Horatio Alger-type character might make a breakthrough to the top, but he usually ensured his success by marrying the boss's daughter.

From the end of World War I until the depression days of the thirties, executives were recommended by word of mouth in somewhat haphazard fashion. The test was, "Who do you know?" rather than "How good are you?" But prosperity was everywhere, and a good man who wanted a job could find one quite easily. Executive man power, moreover, was plentiful enough to fill whatever openings occurred.

Then, of course, in the depression years, the executive man-power problem was one of surplus. The situation was so grim that good people with executive skills were glad to get any kind of "bread-and-butter" job. The conditions of these depression years plus those of World War II created the executive scarcity problem of the fifties, which still persists and may become worse in the sixties.

Perhaps we should pause here for definition of the term *executive*, since common usage of the word is not sufficiently precise to identify the particular level of man power being discussed. The executive of whom we speak is the professional manager. He is not the executive trainee nor the potential executive, but the man who has proven himself through performance and whose experience, training, position, and salary level identify him as a person of competence and accomplishment.

These professional managers may be leaders specializing in such functions as sales, finance, manufacturing, engineering, personnel, and the like; or they may be general managers, chief executives, or administrators with multifunctional skills. They may be in industry, government, or educational and similar nonprofit institutions. They are further identifiable by their salary ranges, which are seldom below $15,000 and more often are between $20,000 and $40,000. Salaries of top executives can range from $50,000 to more than $300,000. Their ages cover a wide range, from 35 to 55, with those beyond 55 moving into "senior citizen" status as top officers, board members, and sometimes retirees.

Early Executive Recruiting

In the depression years, the executive man-power pipelines were full to overflowing, and there was no detectable upward movement. Very little was being done to develop managers, and college recruiting was almost at a standstill with a few notable exceptions of companies like DuPont, Procter & Gamble, Eastman Kodak, General Motors, Union Carbide, General Electric, Macy's, and Westinghouse. Significantly, these companies have never had difficulty in finding executives, because they have kept up their stocks of well-selected college graduates.

My earliest recollection of the beginnings of executive recruiting activity goes back to the end of the depression years—1938 or 1939. As Placement Officer at Columbia University, I received letters from Booz, Fry, Allen and Hamilton, signed by Richard M. Paget (now

of Cresap, McCormick & Paget) that referred to very attractive opportunities with one or another of their clients. Soon afterward, I was invited to luncheon with Ralph K. Rogers and Arthur J. Slade, who wanted to try out on me an idea that was somewhat of an innovation in recruiting executives. The idea was that a company needing an executive should retain a consultant and pay him a fee to find and help them select a well-qualified individual. They proposed setting a flat fee of about $3,000, which would be paid as follows: $1,000 down at the commencement of the search, $1,000 at the end of the first month, and $1,000 at the completion of the search. The figure would increase with the size of the executive's proposed salary.

We discussed the pros and cons of this approach and whether employers who had been using their own resources would pay such a fee. It seemed to me that this service, professionally performed, was needed and should be paid for by the client. In exchange, he would receive more concentrated and expert handling of his executive procurement and would be relieved of the details and the hidden costs of time and money involved in doing the job himself.

With this as their initial "product line," Rogers and Slade built up what is now Rogers, Slade and Hill, a management consulting firm that offers general consulting services and is one of the well-known New York firms.

The Big Surge

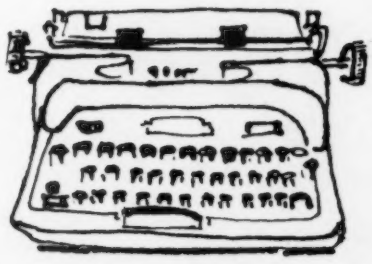
During the depression years, not only were managers marking time and not being trained, they were also getting older. World War II further delayed the development of executives; the middle and top managers who had not gone to war retained their jobs, and their ages crept into the forties, fifties, and sixties.

The rude awakening came in the middle 1940's and 1950's when there was an actual shortage of middle and top management executives. Older managers were about to retire on account of disability and age, and younger potential managers were not yet ready for executive responsibility.

Because of these conditions, "management development" and "executive search" programs sprang up everywhere during the 1950's. The American Management Association was perhaps a major influence, along with the Graduate School of Business at Harvard and the Arden House Executive Program at Columbia. In addition, in-company programs and college, university, and outside programs were initiated in an attempt to develop and qualify managers rapidly.

The organizations most desperately in need of replacements searched for executives through their contacts in industry, through advertising—even through contacts on the golf course. These techniques were altogether too slow, and many companies then looked to the executive search services, most of which were, at that time, adjuncts of consulting firms, with only a few independents. In 1950 there were no more than ten firms to which one could go to find an executive. By the middle fifties there were about fifteen firms in New York and Chicago, mostly split-offs from the established consulting firms. Today more than one hundred such firms operate in many sections of the country. The trend has been for some of the management engineering firms to abandon executive procurement and for individuals to set up their own independent shops.

The consulting field, which should be staffed with only the most skillful, experienced, and wise professionals, now tends to be overcrowded; as a result, competent, executive-recruiting personnel are scarce. The pur-



chaser of these services should be cautious when selecting a search firm.

A group of established consultants has set up an organization to give leadership and guidance to this field on such matters as professional standards and practices. The Association of Executive Recruiting Consultants now has about a dozen members, and as the younger firms prove themselves they will be invited to qualify for membership in this professional group. These experienced and reputable firms are now and will continue to be the skillful matchmakers for executives and organizations, and as such they perform a very valuable service.

Growth of executive recruiting activity was reported in late 1960 by *The Wall Street Journal*. The article cited two surveys, one of 109 companies in which 38 per cent were using recruiting services, and another of 157 medium-sized companies in which 21 per cent followed this practice. The trend is gaining momentum under pressures of company expansion, constantly increasing business, acquisition programs, new businesses, and new products. Technological change and the spreading international preoccupation of American business are additional influences upon growth of executive recruiting.

PROS AND CONS

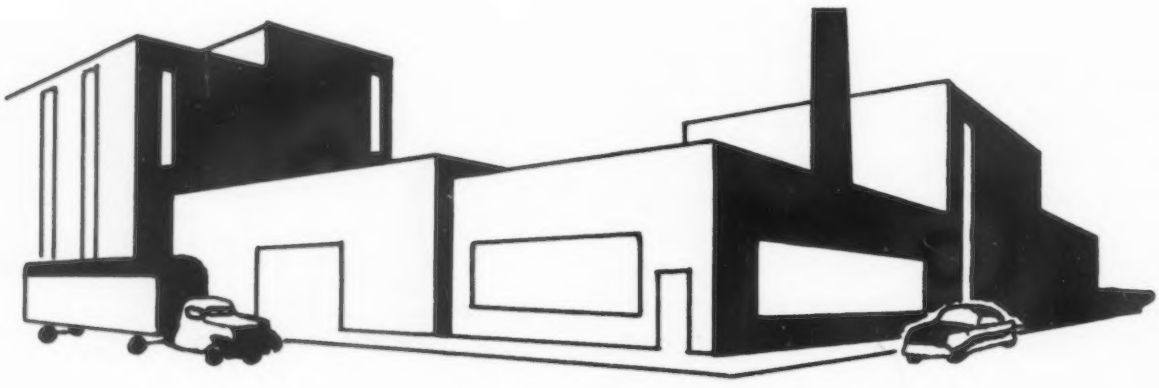
Executive search has been in the press so much recently by virtue of its growth and influence that it has become somewhat controversial. There are those who call recruiters "pirates," "headhunters," "raiders," "body snatchers," "thieves," and worse. It is charged with being an unethical activity and a disturbing influence on the peace and quiet of the industrial community and its executive population.

There are, of course, advantages, drawbacks, and cautions for all concerned with executive search—the company, the executive, and the recruiting firm. Some of the criticism of recruiting firms may be deserved by inexperienced newcomers to the field. The activity criticized, however, would go on with or without the consultant, and I strongly believe that the professional handling of a search problem can, and should, benefit all parties.

Justification

Is there an answer to the epithet of "unethical" tossed at this growing profession? Such a complaint usually comes from sources that have lost a good man and, as a consequence, are disgruntled. Often they find out too late that the man they lost was unhappy for one reason or another and that he could have been retained by appropriate, tangible, and timely recognition.

Freedom of choice in the executive market works two ways. The boss is free to choose whom he wishes for his executive staff; the executive is free to further his own career whenever he has a presumably better opportunity. The former has a right to fire an executive, and an executive is entitled to resign.



Executive search professionally performed needs no defense. This growing specialized function offers a very valuable service and is a positive good for the national economy. It is a powerful influence, on a country-wide scale, toward the proper utilization of our limited executive population.

The service performed by executive search can be likened to the New York Stock Exchange. It establishes a market and a means of transfer. It reveals the capacities, qualifications, and particular competency of individuals by measuring them against others. By the same token, the company or organization reveals its qualifications so that the potential new executive can make his decision in the light of full information. Thus, the best qualified executives should reach those higher positions in which they can best perform and serve, and the proper placement of this executive man power in the critical positions that enable a man to fulfill his potential should affect the total productivity and effectiveness of the nation.

The executive market, established by the very existence of professional search firms, performs a service for the individual executive as well as for his future employer. Even in the face of traditional scarcity of executive talent, a merger or an acquisition may occur. One recent merger of two chemical companies ended up with two executives for each position. Other changes take such forms as shift in the control of an organization, loss of government contracts, obsolescence of product, change of location, economy programs, recessions, and the like, and all can take their toll of executives. When such events occur, the individual executive has available to him the executive market, as represented by the search firms, as an aid in relocating.

The end result of executive search both for a man and for his new employer is to call him to a larger and more challenging position, thereby making greater use of his talents. The executive increases his status, his position level, and his income and will be expected to contribute to the realization of his employer's profit potential.

Admittedly, the executive search activity appears to work a hardship on the employer who is left behind. But he, too, has an opportunity to use executive search service to replace the executive he lost. The loss makes him face up to the question, "What's wrong with our company that we have to lose such a man?" There may be nothing wrong, but, on the other hand, companies have quite often awakened to deficiencies that make them vulnerable to loss of key people. For example, they may have a poor organization; they may have handicapped their executives with poor delegation or too much paperwork; or they may not have competitive compensation levels or incentives. On the positive side, they may not truly miss the man who leaves because they have an even better man who can be moved into the vacancy. A certain amount of upward movement is good for every organization.

THE NEED FOR RECRUITING

Some of the typical situations that bring about a need for searching to fill an executive position are:

1 Rapid company growth causing the executive staff to be too meager to back up key executives

2 Vacancies in existing organization due to retirement, disability, or resignation

3 Reorganization requiring a new team

4 The further delegation of top executive responsibilities requiring the creation of one or more new positions

5 Decentralization bringing about a need for competent general managers and other executives in the new divisions

6 Failure of a present executive to perform and the need to replace him with a more competent man

7 Changing technology that requires special kinds of engineering and scientific executives

8 Acquisitions and mergers with firms in

which competent management may be lacking

9 Development of new product lines that require specialized executive staffing.

The Process

It should be noted here that many companies assign a member of their own staff to undertake executive search. He may or may not retain a search firm to help him. One well-known company faced, because of a meteoric expansion, with executive needs of more than a hundred men hired two managers of executive employment and at the same time retained six executive search firms.

More usual, however, is the handling of executive staff problems by a staff man working directly with candidates and recruiting, screening, and processing them for the company official who has placed the requisition.

Often, the individuals being sought have unusual and highly specialized skills and experience that make them hard to locate and attract through normal company-recruiting channels. The function of the outside consultant in a search assignment is to relieve the client of the concentrated and exhaustive work that is involved. The consultant also has the advantage of objectivity of evaluation, freedom of approach to potential candidates, and a confidential climate for exploration.

Careful planning in advance of the search is essential. This involves a thorough briefing covering the background of the client organization, a clear definition of the position requirements and specifications, and all other pertinent information. Matching man and job must go beyond technical qualifications; personal adaptability to the organization, its people, and its environment should also be emphasized.

It is important to consider candidates from inside the organization first. When the qualifications of present staff members are in doubt, measuring them against outside candidates may resolve the question. A thorough search begins inside the organization and then proceeds outside. The individuals whose records and performance recommend them as potential candidates are uncovered by a search of industry files, professional and business directories, by personal contact, by phone, and by letter. Finding the right man is like the "chain reaction" where one contact leads to another.

The consultant then interviews and screens the candidates, investigates their references, and presents to the clients a report with recommendations preparatory to presenting individuals for client interview and decision.

Fitting a man into an organization requires matching his personality with that of the company and those of its individual executives. This is a delicate task calling for skill and sensitivity on the part of an executive recruiter. As a part of the screening process and as final assurance that the man and the position are right for each other, candidates are frequently asked to undergo a physical examination and a psychological appraisal. This latter step assesses the man's personality, his strong points, and his shortcomings in relation to the specific company and position. The psychological assessment is particularly valuable in selecting a man for overseas assignment. In such instances, our firm also evaluates the wife because her personality, attitude, and general outlook are essential to her husband's success.

Typically, the search for an executive is conducted confidentially. Often there is the ticklish situation of replacing a current member of an executive staff, or a desire to avoid



morale problems within the company. Likewise, the individual who is being approached and considered is currently employed and does not want to jeopardize his present job.

The consultant playing the part of middleman must be very careful in his relations with his client, prospective candidates, and those contacts who help him identify candidates. He must be a diplomat, a salesman, a counselor to the individual, and a consultant to his client. He must know a great deal about companies, industries, organization structure and functions, man-power planning, and position descriptions and have ample resources of information about people and places. Well equipped in these areas by experience and training, he must use ingenuity, imagination, critical analysis, objective appraisal, and adroitness in order to achieve success in the complex and difficult responsibility of professional executive recruiting.

Fees

The typical fee is based upon 20 to 25 per cent of the annual salary of the position, depending upon the difficulty involved and the scarcity of candidates. Some consultants charge on a regular retainer basis and others on a per diem or hourly basis.

Unlike employment agencies who are paid only upon "delivery" and are limited to 5 or 10 per cent commission depending upon the state law, the consultant bills a proportion of his fee each month until the position is filled, providing he does not exceed the predetermined fee. The main difference between the employment agent and the search consultant is that the latter represents the client exclusively and, in a sense, is an extension of the organization's staff during the assignment, whereas the employment agent is representing the individual from whom he derives his fee unless the company has agreed to pay it. Search firms also charge out-of-pocket expenses for major items such as long-distance calls, travel, hotel, and advertising.

Contacts and Records

Articles about executive search seem to stimulate an avalanche of letters and résumés to the offices of search consultants. Most of us welcome such opportunities to widen our contacts and build up our executive inventories. The larger firms code and file these résumés when the qualifications are sufficient to warrant present or future interest.

Everyone in the business has the same problem with these contacts. Because there are only so many hours in the day and these are necessarily devoted to clients who are paying for our services, it is difficult to find time to meet and visit with these well-qualified people until there is a specific position of mutual interest to discuss.

Our firm maintains an up-to-date classification system using the McBee coded files. We estimate that roughly one out of ten of our executive positions has been filled by candidates whose records were in these files. Our collective plea as executive recruiters is for patience and tolerance; we will be in touch when there is a real position in which the executive's qualifications meet the client's requirements.

THE MESSAGE of this article for companies, institutions, and all other organizations is a reminder that executive man-power planning must be taken seriously and cannot be separated from long-range, or even short-range, planning of goals, budgets, products, and policies.

Whether or not the predicted shortage of executives develops, there will be a continuous demand for able executives and administrators due to the fast-changing times in which we live. Just as a winning crew seeks out, trains, and places its best men at the oars, backing them up by strong reserves, so must successful organizations prepare for contin-

gencies that may take a good man out of the race.

Moreover, the planners of executive man power—both companies and recruiters—should forget their bias against the "old pros," the men between 50 and 65. These men of great experience and seasoned wisdom have much to offer. Undoubtedly, with careful selection, they can become more immediately productive than the executive trainee under 35 years of age. They can provide successful performance and, at the same time, constitute "stop-gap" troops that will allow time for the younger potential executives to arrive.

Constant consideration should be given to recognition of management potential among the executive trainees so that they may be tested in executive responsibilities earlier in their careers. We will then have two sources, the "young bloods" and the "old pros," from which to draw should the predicted decline in workers actually occur.

Professional executive search as a recognized business function will become increasingly important with the acuteness of the executive shortage. Whether conducted internally or externally, it will continue to offer strong support to effective executive manpower planning.

EACH human self is single, incommutable, and unique. This is its *first* reality. Each self is unique, and therefore incomparable. It is a single well-head of creation, unquestionable: it cannot be compared with another self, another well-head, because, in its prime or creative reality, it can never be comprehended by any other self.

The living self has one purpose only: to come into its own fullness of being, as a tree comes into full blossom, or a bird into spring beauty, or a tiger into lustre.

But this coming into full, spontaneous being is the most difficult thing of all. Man's nature is balanced between spontaneous creativity and mechanical-material activity. Spontaneous being is subject to no law. But mechanical-material existence is subject to all the laws of the mechanical-physical world. Man has almost half his nature in the material world. His spontaneous nature *just* takes precedence.

—*D. H. Lawrence*
ESSAY ON DEMOCRACY

MERRILL J. ROBERTS

TRANSPORT DYNAMICS and Distribution Management

THE DRASTIC changes taking place in transportation today are presenting a great challenge to business management. Carriers and shippers must adapt to alterations in the marketing and the purchasing of transportation services; each group must accommodate to changes on both sides of the transaction.

For purposes of this article, transport dynamics is viewed in these terms: (1) transportation is changing on the supply side as a result of alterations in regulatory philosophy, management attitudes, and technology; (2) these changes in supply are being reinforced by improvements in the criteria governing transport purchasing decisions that spring from the progressively more refined and sophisticated approach to distribution system analysis. This discussion will focus primarily on changes, both actual and potential, in the pricing and marketing of transport services and on the trend toward a coordinated transport network. It will then attempt to indicate some of the implications of these developments for distribution systems and transport purchasing.

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PRICING AND MARKETING

Since public and private responsibility both play a part in our transport system, new approaches to the pricing and marketing of transport services depend on reform of both regulatory and management policies. Policies initiated by carrier management, essentially private business management decisions, must be acceptable to regulatory authorities. The nature of the regulatory veto will, therefore, influence not only the formulation of, but also the disposition and implementation of specific management policies and decisions. It will, moreover, establish the general climate of decision-making and influence the degree and character of initiative that is exercised.

Although initiative does rest squarely with private management and the specifics of regulation do not provide the entire key to rate modernization, a favorable regulatory climate

is a necessary condition, even if not a sufficient condition, for reform. Regulation should certainly not discourage, and might conceivably encourage, modernization programs designed to remove the monopoly features built into railroad rate structures in an earlier period and widely adopted by the common carrier trucking industry.

The Regulatory Environment

Many observers believe that by excessive restrictions on competitive rate reductions regulation has, in the recent past, unduly hampered private management in its efforts to eliminate the old value-of-service structures that are anachronistically predicted on commodity values. The Interstate Commerce Commission is guided in rate matters by a statutory provision known as the "rule of rate making." This provision was amended by the Transportation Act of 1958 in an apparent effort to remove the regulatory barriers impeding such rate reform.[1] But the 1958 amendment seems to have been an ambivalent and uncertain enactment. It encourages price competition by explicitly prohibiting the Commission from holding up the rates of one agency to protect the traffic and revenues of another; however, it also explicitly retains the national transportation policy strictures against "unfair and destructive competitive practices."

Clearly, the latitude allowed to management in matters of pricing depends on the Commission's interpretation of this key phrase, and uncertainty reigns supreme. The Commission's approval of the reduced paint rates in Eastern Territory, which is regarded as something of a landmark case, does not provide a very accurate gauge of its interpretation.[2] In that instance, the reduced rates were calculated to increase the railroads' 5 per cent share to only 35 to 40 per cent of the traffic. Aiming as it does at less than half the traffic, this percentage does not begin to challenge the Commission's long-standing conception of "fair" market shares. One can only wonder what the answer would have been if the reductions had been calculated to maximize net revenues by capturing 75 or even 100 per cent of the traffic.

This uncertainty is reflected within the Commission itself. In a statement before a Senate Committee in June, 1960, Commissioner John Winchell said he *thought* that, since the 1958 amendment, the Commission had accorded more weight to management discretion in competitive rate making. Nor is there any unanimity among the Commissioners as to the appropriate interpretation of the 1958 amendment. In a recent case, they were sharply divided on an order requiring rail piggyback rates to be maintained at a level 6 per cent above corresponding truck-water (fishyback) and sea-train rates. Commissioner Howard Freas stated that in his view the order represented "umbrella" rate making of the type that the 1958 Act had specifically prohibited. The "Bartlett bill," introduced in the present Congress, has contributed to the uncertainty by proposing to reintroduce some of the restrictions that the 1958 amendment successfully eliminated.

Although there is evidence of some loosening up of regulatory restraints, it is questionable whether the existing statute as it is interpreted provides the latitude needed for the rather substantial revision of rates that many observers consider essential to an efficient and coordinated transport system. Rates designed to provide shippers with the lowest possible cost and, at the same time, to maximize net revenues for the pricing carriers should not be regarded as "unfair and destructive" because they capture the lion's share of a market. It seems clear that Congress must provide a firm and unambiguous statutory definition of proscribed competitive practices that reflects sound economic principles.

[1] Public Law 85-625 (Aug. 12, 1958). 72 stat. 568.

[2] *Paint and Related Articles—Official Territory*, I. & S. Docket No. 7027. Decided Aug. 27, 1959. Official (or Eastern) Territory generally embraces the area east of the Mississippi and north of the Ohio Rivers.

While regulation may be too restrictive to permit the full-scale readjustments that are required, the leeway appears to be generally sufficient to accommodate the sort of competitive reductions that rail management, the leader in these revisions, is presently prepared to adopt. John McMichael of the Traffic Executives Association, Eastern Railroads, reports that the Commission has accepted every one of the rate proposals sponsored by his group.[3] It must be recognized, however, that the boldness of the proposals has probably been tempered by a realistic assessment of the chances for approval.

Carrier Management Policy

At least as significant as any change in regulatory environment is the action taken by carrier managements under present conditions. The growing market consciousness of railroad managements is indeed encouraging; they have become far less inclined to throw service on the market on a take-it-or-leave-it basis. Former Commissioner Owen Clarke, now with the Chesapeake and Ohio Railway, recently told an American Management Association seminar:

> ". . . in the railroad industry today, we are looking upon shippers as *customers*. More and more in the future, the shipper's slightest wish will be our command (as long as we can make some profit out of it, of course!). We are all quite aware, I think, that this has not always been the predominant attitude among railroad managements in years past, and in some instances, perhaps, it still does not prevail. More and more, however, elements of the modern marketing concept are becoming recognized and accepted by railroad managements."[4]

The changed attitude is reflected in the market research activities recently instituted by the railroad rate committees in several territories and by individual companies. This research delves into the economics of the industry producing the commodities whose rates are under scrutiny. It studies competitive relationships, pricing structures, and marketing problems, explicitly recognizing the relevance of total distribution systems for the selection and purchase of transport services. It also establishes close relationships with the shippers and receivers of the freight involved. A number of new rate adjustments have emerged from these activities. The Missouri Pacific has revised its rates on fruits and vegetables to counter exempt truck competition, and some Eastern railroads have reduced rates on insulators (up to 40 per cent), synthetic rubber (up to 30 per cent), and window glass (up to 40 per cent). The research organizations, both of the territorial committees and of the individual railroads, are currently studying many more commodities with a view to further reductions.

While these research efforts are of great importance not only as an indication of a changed attitude on the part of carrier managements but also for the specific rate reductions that they have produced, it is apparent that a commodity-by-commodity approach will be painfully slow. It is true that a certain deliberateness and caution are perhaps called for lest changes do more harm than good, and that the scope for change may in many cases be limited when profit effect is the criterion.[5] Many students of transportation, however, believe that the time of crisis for the railroad industry is close at hand and that its salvation as a private enterprise system hangs in the

[3] Gardner C. Hudson, "Rate Men Ready for Action," *Railway Age*, CL (Jan. 16, 1961), 37.

[4] Owen Clarke, "The Rail Carriers," part of a symposium on "The Common Carriers' Part in Product Distribution" in *Management of the Physical-Distribution Function* (Report No. 49; New York: American Management Association, 1960), p. 52.

[5] For example, if a rate is $1.00 per hundred pounds and out-of-pocket cost is $.80, the revenue contribution or profit is $.20. A rate reduction of 10 per cent to $.90 will not cause gross revenues to decline if volume is thereby increased by only about 11 per cent, whereas it would require a doubling of sales to equal the present profit from this traffic.

balance. This suggests a need for a systematic, far-reaching attack on rate modernization based on generalizations regarding transport market behavior as a supplement to the laborious commodity-by-commodity approach.

This generalized approach demands, in addition to inquiries about specific industries and commodities, more basic research into the character and structure of transport markets and costs. It would presumably be carried on at the industry or territorial (rather than company) level since the results would, one hopes, be of general applicability for sound rate revision. It is the kind of research that the industry might well support in universities and other research centers. It would benefit carriers by hastening the process of reform; at the same time, it would reduce the extent of "selective rate cutting," which may be sound pricing policy (aside from the time problem) but which also has an odious ring in some Congressional committees and elsewhere. And certainly shippers have an interest in such research since it would implement and hasten needed rate readjustments that will improve distribution systems and throw light on market relationships that would be useful for their own transport purchasing decisions.

Other transport industries and firms are also engaging in market research activities. Many airlines have well-developed market research programs that have contributed to an understanding of integrated distribution systems. The REA Express has become a leader in this area and has recently instituted a free consulting service for shippers, which undertakes research to help shippers find out and then make known what they want and need. There is evidence, too, of a growing interest and awareness among motor carriers of the importance of such research, but as yet they have taken little action.

Rate Reductions

As a result of both regulatory reforms and more progressive management policies, transport markets are becoming more competitive. It is apparent from recent transport history that the number of rivals in a market is not the key determinant of its competitiveness; full-scale competition is a result of the aggressiveness of the rivals, which is manifested in their efforts to outdo one another not only in services offered, but also in prices charged. The chief outcome of increased competition on the price front is rate reductions. One railroad official is quoted as saying that, despite the substantial increase in costs and in the general price level since 1946, many rail rates have dropped to 1946 levels.[6] Some examples of drastic cuts in Eastern Territory were cited previously. Clearly, this intensified price competition will bring about especially sharp reductions in rates on manufactured commodities as the old value-of-service structures erode; these rates, based on commodity values and born of railroad monopoly, are the most patently obsolete, particularly where proprietary truck transportation exists as a real alternative.

It should be noted that rates need not decrease absolutely to make transport services a better bargain. The new competitiveness is reflected to a considerable extent in rates that are lower in a relative sense but not necessarily in an absolute one. This relative lowering occurs either when the quality of service increases more than rates, or when increases in transport prices fall behind those on other goods and services.

Relative reductions of the latter sort are reflected in the annual indexes of rail rates published by the ICC for a number of the more significant commodity classes.[7] Between 1950 and 1957, the consumer price index rose by nearly 20 per cent; during this same period many rail rates increased by less than 10 per cent according to the Commission's indexes,

[6] Kenneth U. Flood, "Questions in Company-Operated Transport," *Harvard Business Review*, XXXIX (January-February, 1961), 128-29.

[7] Interstate Commerce Commission, *Indexes of Average Freight Rates on Railroad Carload Traffic, 1949-1957* (Washington: U.S. Gov't Printing Office, August, 1959), pp. 1-12.

including rates on such important commodities as baled cotton, crude petroleum, iron and steel pipe and fittings, cement, paperboard, fibreboard and pulpboard, and canned foods.

Incentive Rates.—A form of reduction that merits special attention because of its increasing employment is the incentive rates of the railroads. These rates are designed to achieve the economies of full vehicle loading by sharing the cost savings with shippers. A classic example is the reduction on paint and related articles that became effective in Eastern Territory in October, 1959. This scale provided incentives calculated to encourage loadings up to 90,000 pounds in lieu of the prevailing level of less than 30,000 pounds.

Many of the recent railroad rate reductions embrace this same type of incentive feature, including the Eastern Territory reductions on insulators, window glass, and synthetic rubber. To the extent that the rate reductions are effective, their primary impact is to cause a shift in traffic among the modes of transportation. This shift dictates alterations in distribution systems to the extent that it is attributable to the incentive feature. Substantially larger shipments are apt to occasion heavier inventory costs at the producing plant, in transit, and in the hands of customers. Such a shift not only requires alteration in inventory policy, but as a secondary effect may well lead to heavier warehousing requirements. The ultimate effect is a distribution system characterized by more fixed costs and a loss of flexibility —the reverse of the trends of the past several decades. Carriers must take account of shipper resistance to this development in assessing the potential of incentive rates.

Some of these developments are apparent in the paint industry's response to the new rates on its products. According to one major producer, traffic allocations from at least some of its plants (and on some of its product lines) reflect a substantial shift from truck movement to movement by rail. Rail shipments during 1960 from one plant totaled 170 carloads, which were substituted because of the rate change for 386 truckloads. From another plant, the 1960 rail volume was double the 1959 level. One 80,000-pound rail shipment, instead of three truckloads, is now dispatched weekly to a major receiver in the South. It is important to note, however, that shipments in some product lines and from some plants have been largely undisturbed, showing the influence of nontransport considerations in transport purchasing decisions.

Agreed Charges.—Another form of reduction having special implications for distribution systems is agreed charges. Contract rates of this sort, which require shipper commitments of a major share of tonnage, are highly successful competitive devices in Canada but have not yet received regulatory sanction in this country. The Soo Line and other participating companies have put before the Commission a contract rate that would apply on steel or wrought iron pipe and tubing where at least 90 per cent of the tonnage of participating shippers is routed by the rail carriers. Although the Commission recently disapproved a New York Central contract rate on moving rugs and carpeting from Amsterdam, N.Y. to Chicago, it indicated that the veto applied only to the specific proposal and not to the rate innovation itself.

The viability of these rates should be settled promptly on the basis of rational economic criteria rather than legal precedent. If they do receive the Commission's blessing, the associated rate reductions would, like all good things in life, come at a price. Long-term commitments of substantial portions of a company's output would essentially freeze the transport component of the distribution system. The resulting loss of flexibility may be costly as other components of the system—some of them rather volatile—continue to change.

For example, the costs of maintaining inventory may increase, thus dictating shipment by truck rather than by rail. What is a sound transport component when the contract is signed may later prove to be otherwise. Sub-

sequent failure to deliver the required tonnage will then impose penalties on that portion already shipped by rail, and, in retrospect, the use of rail may not represent the best choice at the higher (noncontract) rates.

Rate Increases

We have thus far emphasized rate reductions. Railroad traffic officers, however, are becoming concerned about the need for increases where rates are unduly low. The most obvious examples of such rates are, of course, those that fail to cover the out-of-pocket costs of movement. An examination of the studies on revenue contribution by the Commission's staff confirms that these deficit commodities are, as one would expect, frequently products of the extractive industries, generally the raw materials and semiprocessed inputs of manufacturing industries. There are undoubtedly many other cases in which rates, while not producing deficits, exceed out-of-pocket costs by unduly low margins.[8] These rates may have been economically tenable in earlier years, and, on the whole, they served a developmental purpose in that they encouraged the flow of commerce. Nor were they particularly inconsistent with private profit interests when combined with highly profitable outbound hauls. Now, however, their sanction has weakened with the relatively full economic development of the country and the loss of profitable outbound hauls to competitive modes.

COORDINATING THE SYSTEM

The need to effect a fully integrated transport system to meet shippers' requirements and to reduce distribution costs becomes increasingly apparent with the development of more refined (and integrated) distribution system analyses; these often dictate the use of combinations of carriers that are not always available.

Containerization

Because piece-by-piece rehandling is so costly an operation, full transport coordination requires a device to effect interchange economically and expeditiously. The essential tool for this interchange is the container, and the new interest in the old concept of containerization indicates a recognition of its clear-cut advantages, many of which are not restricted to its coordinative possibilities. Multiple-agency service is not required for realizing such benefits as reduced losses from pilferage and damage, faster turnaround for mobile equipment, reductions in warehouse expenses and in packaging costs, and improved customer servicing.

The integration that has been effected in sea-land and rail-motor services, with the highway van usually serving as the container, is a start in the development and use of this essential tool of coordination. Piggyback services, though still in their infancy, are generally regarded as the forerunners of what is required for a mature containerization system. Despite the comparative newness of these devices, notable gains have been achieved both in the total volume of integrated traffic and in the benefits to shippers. Piggyback loadings in 1960 were up one-third over 1959 and were double the 1958 figure.[9] One company is reported to be saving $100,000 a year just on its Chicago-Denver shipments by eliminating rehandling in Denver.

Certainly these beginnings are encouraging and even dramatic. Progress, moreover, will be accelerated by such innovations as the REA Express trailer pool established recently. But there is a long way to go. Even in 1960, piggyback accounted for less than 2.0 per cent of all carloadings and for only 3.5 per cent of loadings of freight in the "manufacturers and miscellaneous" category.[10] As with the reform of rate structures through the commodity-by-commodity approach, adding a few hundred piggyback cars a year is not going to appreci-

[8] Interstate Commerce Commission, *Distribution of Rail Revenue Contribution by Commodity Groups* (Washington: U.S. Gov't Printing Office, 1960).

[9] "Review of Railway Operations," *Railway Age*, CL (Jan. 16, 1961), 54.

[10] "Review of Railway Operations," 54.

ably advance our development of a truly coordinated transport network. There is a need for refinement and development of the container tool in the interests of standardization, full intermodal compatability, and adaptability. But as former Commissioner Anthony F. Arpaia has suggested, these problems are more apt to be handled promptly and efficiently if the environment of and attitudes toward effective transport coordination are healthy and stimulating.[11] In other words, surmounting any technological barriers to effective coordination will not be helpful without appropriate regulatory and management policies to provide the right institutional setting.

Common Ownership

The two basic paths to effective facilitating arrangements are common ownership, as espoused by the railroads, and fuller exploitation of through routes and joint rates, or contractual cooperating arrangements by independent firms (either with or without regulatory intervention). Extensive hearings, designed to ease the path to diversification or common ownership, were conducted in the last Congress on proposed amendments to the Interstate Commerce Act. The issues are also being spotlighted in the John I. Hay case, where the Illinois Central and Southern Pacific Railroads seek to purchase a common carrier barge line; here the interpretation of some important facets of present law is under consideration. The interests of shippers and carriers alike demand a speedy but well-considered resolution of this question.

Without entering into the controversial aspects of the problem, we may note the implications of common ownership for shipper control over the components of the distribution system. It is quite likely that shippers themselves can best determine the superior quality-price combinations of transport facilities and services in given situations.

[11] Anthony F. Arpaia, "Integration of Transportation Systems," address before the Cargo Handling Exposition and Symposium, New York City, Sept. 28, 1960.

Most discussions of transport under common ownership presume, however, that such decisions will be made by carrier managements. It is not clear just how important loss of control might be for delicately adjusted distribution systems or how this loss would be offset by gains that might be realized from common ownership. But it is probably sufficiently important to warrant the consideration of shipper interests in formulating views on the common-ownership controversy and of carriers in planning for diversified transportation.

Coordination Without Common Ownership

It seems, also, that common ownership represents only a partial answer to the problem of providing necessary facilitating arrangements for the effective integration of the transport system. It would provide the entire answer only if the railroads were to swallow up all independent air, water, and truck lines. The railroad proponents of common ownership vociferously deny both their intention and their ability to achieve this result. Accordingly, coordinative arrangements are still required between diversified railroad companies and independent carriers of all types, as well as between independent carriers and agencies.

It is generally recognized that the interagency coordination achieved by the establishment of through routes and joint rates has been relatively insignificant, despite the crucial importance of these devices for an integrated system. Clearly, drastic changes are required in either management or regulatory policies or both. Advocates of cooperative effort must recognize that voluntary contractual arrangements for the joint production of transport services must have a profit base; vague and general exhortations to broad-mindedness and statesmanship are apt to sound rather unconvincing to private management. Perhaps profit opportunities have thus far been limited by the absence of effective interchange devices, particularly containers. To the extent that this is true, the difficulty would be self-correcting as these devices are refined and developed. But it is also

possible that available profit opportunities are missed because of biased and myopic management attitudes, such as an undue preoccupation with short-run benefits or an inherent distaste for doing business with a competitor.

The latter attitude may perhaps be illustrated by reference to piggyback operations under which the railroads haul trailers for common carrier truckers to effect the coordination of the two modes. Although there are notable exceptions, one notices suspicion on both sides. "A" will not buy from "B" because if B is willing to sell at a given price he must be benefiting from the transaction in a way that is detrimental to A; neither will B sell to A because if A is willing to buy at a given price he must be benefiting from the transaction, and therefore it must be against the interests of B.

If this thinking permeated the market place, there would be no transactions and the world's commerce would grind to a halt. Obviously, a transaction can be effected only when both parties benefit, and the gain of one does not represent a loss to the other. There is no apparent reason that such mutual gains cannot be realized in relationships of this sort, even though the companies involved also operate as competitors in other market situations.

The achievement of desirable coordination through voluntary means may serve company self-interest to an extent not fully realized. The following hypothetical example will serve to illustrate the point. Commodity "X" is moved from "O" to "D" via "I" by both railroad and truck, with the market evenly divided at 1,000 tons each per time unit at equal rates of $1 per 100 pounds. Let us say the direct (or out-of-pocket) costs are $.80 by rail and $.85 by truck. With these price-cost relationships, the respective rail and truck revenue contributions per unit are $.20 and $.15 and the total contributions are $2,000 and $1,500. Let us assume further that the cost of the O-I leg is $.40 by rail and $.25 by truck and of the I-D leg $.50 by rail and $.70 by truck. Combined rail-truck service with interchange at I would be the cheapest alternative, amounting to $.75 in comparison with the all-rail cost of $.80.

Even if this cost saving were fully reflected in the governing rate, each cooperating carrier would make more profit by concentrating exclusively on that portion of the total job it could do best. If the rail carrier received $.62 for its portion of the haul, it would realize a revenue contribution of $2,400 from the 1,000 tons, a 20 per cent increase over the $2,000 previously realized. With a $.33 share the motor carrier could net $1,600 instead of $1,500. This level of compensation to the carriers and transfer costs of $.02 at I could be covered by a rate of $.97. In this hypothetical situation, the rate could drop by $.03 while the revenue contribution increased from $3,500 to $4,000, to the benefit of all concerned.

It is incumbent on carriers and on the Commission to determine the applicability of this case and to find the cost-rate-revenue division combinations that will achieve the result outlined in our simple example. Shippers have a big stake in finding answers to these questions and they should strongly encourage the investigations needed to understand these basic relationships.

If the search for such profit opportunities through coordination should fail, the only path to effective and complete coordination is to grant the Commission more power to prescribe through routes and joint rates and to ensure their effective use. But this cure should be prescribed with caution. Before broadening regulatory powers, we should fully explore the extent to which profit motives might achieve a truly integrated transport system. If there is substantial inconsistency between company self-interest and the public interest in a fully integrated transport system, then the pros and cons of a broader application of mandatory powers in this area should certainly be considered. Perhaps the explicit threat of further government intervention would stimulate carriers to make a wholehearted investigation into profitable coordination. As the preceding hypothetical example suggests, one of the main barriers may be outmoded rate structures that completely divorce rates from relative agency costs. Thus, the emerging reform in rate relationships may be the first step

toward true coordination for profit. It is possible also that the reduction in the number of independent firms resulting from the merger movements in both the railroad and trucking industries will be beneficial.

IMPLICATIONS

Having discussed the changing patterns in the supply of transportation services, we shall now consider some of the interrelationships between these changes and the transport purchasing decisions of shippers. The latter adjust their policies and decisions to changes in supply, and the resulting purchasing developments, in turn, alter the character and location of the markets of carriers and require further accommodation by them. Some of the more important interrelationships are revealed by considering the implications of emerging changes in supply and in purchasing for price-quality choices, logistical patterns, and distribution system components.

Price-Quality Choices

An important aspect of emerging tendencies in rate reform and in coordination is the widening range in the kinds of services and their associated prices. Quality variations are reflected in speed, frequency, and dependability; direct additions are apparent in new coordinated offerings such as piggyback. Further additions can be expected from the intensification of price competition. The historical concentration on service competition, particularly between the rail and motor carriers, tended to limit the range of such choices. The general result of service (or quality) competition, whether in transport or in the economy generally, is a progressive refinement in quality, which is, of course, achieved only at a cost and with a corresponding limitation on available alternatives. Active price competition induces lower quality at lower prices, which may often be the best buy when transportation is regarded as but one (albeit a vital) component of an integrated distribution system. Better market choices are available, for example, if railroads do not try to emulate truck service at truck-equated rates, but provide lower quality at lower rates (with, however, the best quality attainable at that rate).

With a better understanding of shipper needs from market research, an agency may further increase choices by offering different combinations of price and quality. Incentive rates exemplify such combinations, but important dimensions other than quantity requirements may be introduced, such as transit time and equipment quality or adaptability.

The growing interest in the system approach to distribution should also have an important influence on the range of price and quality choices as well as on other aspects of transport supply. Increasing carrier marketing consciousness and refined market studies will provide shippers with a better opportunity to make their requirements known. The more precise definitions of transport requirements, which will stem from the more refined and sophisticated analyses of distribution systems, will enhance the effectiveness of the shippers' role in this connection. As former Commissioner Clarke suggested, transportation companies are becoming more interested in what shippers want; at the same time, shippers will be less prone to take what is offered and better equipped to respond to the carriers' interest. This improved response will stem from better identification of the types of services, including relatively subtle variations, needed to provide required market servicing and from better insights regarding the true costs of alternative systems predicated on different transport components.

The combined pressures from the supply and demand sides should substantially alter the character of transport services and bring about more effective and efficient performance of both transport and distribution. Only partial economy is achieved when the role of the several agencies is determined on the basis of isolated transport costs. True economy requires that each perform the role that will minimize not transport costs but over-all distribution costs. This is a more refined statement of the common reference to the "most

efficient carrier—cost and quality considered."

Quality in this context is fully quantifiable since it reflects the nontransport distribution costs associated with the use of alternative agencies. For example, the railroads' chief disadvantage when matched against truck movement is the increased inventory costs caused by larger tenders and longer transit times. Professor John R. Meyer and his associates have provided some generalized measures of quality disability expressed in these terms.[12]

If the calculation is based on average value commodities and average elapsed times, and ten-ton truck shipments and twenty-ton rail shipments, the railroad inventory disability from the transit time differential is $.0299 per ton mile at 50 miles and declines to $.0017 at 1,000 miles. Comparable figures for shipment size disabilities are $.0013 and $.0001. The comparative costs of the two agencies are substantially affected by the inclusion of the extra outlays associated with the inferior service.

According to these illustrative figures, if 500 tons were to be shipped 400 miles over a given time period, the extra inventory costs associated with using rail service would approximate $13,000. Let us assume that the movement costs are $50,000 by rail and $60,000 by truck. If transportation costs are considered in isolation, rail appears to be the most efficient alternative by a margin of $10,000. But if the other relevant costs are included in the comparison, trucks are more efficient by $3,000. Shippers who fail to consider and to compute accurately these associated costs in selecting carriers not only inflate their own distribution costs but help to cast the entire transportation system into an uneconomic mold. The more perfectly shippers function in developing integrated distribution systems, the more efficient will be the assignment of the carriers to their various roles and the lower will be the costs of distribution.

[12] John R. Meyer, Merton J. Peck, John Stenason, and Charles Zwick, *Competition in the Transportation Industries* (Cambridge, Mass.: Harvard University Press, 1959), p. 190.

Logistical Patterns

The altered rate relationships we have reviewed may also produce changes in the general logistical patterns of business, which, in turn, will affect a firm's locational decisions as well as those of its suppliers and customers. While other factors may prevent any sharp shifts in plant and warehouse location, some changes in the transportation inputs of location decisions require watching.

The general cheapening of transportation, which, it is hoped, will result from rate reductions and improvements in coordination, would weaken the influence of transportation as a determinant in location and give firms greater freedom to locate on the basis of other considerations. But more specific influences on location are suggested by the changed relationship between raw-material and finished-product rates that may be expected as the old value-of-service structures erode from intensified price competition. A cheapening of finished-product transportation would tend to reverse or at least weaken the trends of the past few decades and decrease the influence of markets on plant location. Such a tendency would be strengthened by any increases in unduly low rates on raw materials, which would enhance the attraction of materials sources. Such rate revisions would mean altered delivery costs of materials and perhaps a switch to new sources, with new patterns of logistical relationships and traffic flows.

Taken in the aggregate, changing materials-product rate relationships, in combination with territorial differences in rate trends, exert an influence on patterns of regional development and thus on the logistical relationships of producing firms. Growing regional self-sufficiency is a dominant characteristic of recent economic history that is rooted in a variety of forces independent of transportation. But rate relationships can either abet or hamper this development, and it appears that recent changes have facilitated and hence hastened the move toward regional self-

sufficiency. Transportation influences in regional economic development can be illustrated by the emerging industrialization of the South. Changing rate relationships appear to favor the expansion of Southern manufacturing, primarily for regional markets. Since 1947, rail rates have increased far more on raw materials (on agricultural, mining, and forest products) shipped from the South to the East and on manufactures in the reverse direction than they have on these two commodity groupings within the South.[13] The relatively large increases on materials exports and manufactured imports and the relatively more favorable trends for rates covering internal shipments of both materials and manufactures encourage regional processing. Increasingly favorable short-haul rates on manufactures compared to rates on longer hauls protect Southern producers against Eastern competition in Southern markets. At the same time, the unfavorable trend in long-haul rates on raw materials discourages the siphoning off of Southern staples to supply Eastern manufacturing.

Distribution Systems

Such developments are clearly of great significance for plant and warehouse location and thus for the design of distribution systems. But there are perhaps other ways in which the realized and potential transportation changes we have reviewed will affect distribution-system components and thus the purchase and sale of transport services.

Certainly we can expect changed transport purchasing decisions in terms of transport modes. Some of the ferment in transport supply is reflected in the recent shifts in the shares of total markets handled by rail and nonrail carriers. The latest available data on the relationship between tons moved by rail and total production of various commodities go only to 1957. Much has happened since that year, but even up to that time there were substantial shifts. For example, between 1950 and 1957 the railroad shares of some commodities reversed general trends and increased as follows:[14]

	Railroad Percentage of Total Tons	
Commodity	1950	1957
Plastics	1	31
Gases, other than petroleum	8	37
Corn meal	16	41
Iron and steel borings and turnings	41	63
Coke	28	53

Conversely, comparable reductions occurred in other sectors:

	Railroad Percentage of Total Tons	
Commodity	1950	1957
Drugs, medicines, and toilet preparations	50	16
Airplanes, aircraft, and parts	26	14
Asphalt	52	21
Electrical equipment and parts	40	19
Matches	54	20
Chinaware	30	15

Such shifts either reflect or occasion alterations in distribution patterns.

If the forces we have observed continue to intensify, we can expect transportation to become relatively cheaper. Because of the complex interrelationships between transportation and distribution systems, the results of all of this are somewhat uncertain, but some implications may be suggested. The lower cost and improved quality of transport may permit the use of alternatives providing greater regularity, frequency, and speed—a move generally unfavorable to railroad interests. In some circumstances, the new alternatives may make it possible to get by with lower inventory stocks and still maintain or even improve the level of market servicing. In other circumstances, the cheapening of

[13] *Indexes of Average Freight Rates on Railroad Carload Traffic, 1949-1957*, p. 6.

[14] Interstate Commerce Commission, *Fluctuations in Railroad Freight Traffic Compared With Production, 1957* (Washington: U.S. Gov't Printing Office, 1958).

transport may make it economically feasible to increase inventory stocks to improve market servicing. This outcome, which would favor railroads, seems particularly likely when the rate reduction is realized through the application of the quantity incentive feature that characterizes many of the new railroad rates.

Distribution systems will be altered by the increased flexibility resulting from more choices of price-quality combinations of the transport services as well as by their general cheapening. Flexibility would be further increased if the expected rate erosion on manufactured articles were to make proprietary truck transportation a relatively less attractive system component, bringing a reduction in fixed organizational and capital commitments. Increased flexibility from whatever source will permit and encourage further refinement in distribution system design. Shipper responses to the new paint rates is an illustration of the effects of this flexibility. Whereas virtually all movements were formerly by truck, some shipments now move by rail.

WE HAVE considered many aspects of transport dynamics and have noted a number of problems, barriers, and implications. Perhaps it would be well to summarize the particularly significant challenges that now face business management.

1 The wider the range of price and quality choices provided by growing price competition, marketing consciousness of carriers, and by the coordination and integration of transport supply, the greater the challenge to traffic and distribution managers. The greater the flexibility provided by alternative choices, the greater the pressure for analytical refinement.

2 Conversely, the more refined the distribution analyses of shippers, the greater the challenge to carrier managers to provide price-quality alternatives that will optimize distribution systems. This will require not only extremely intimate communications with shippers through market research and other media, but also advanced understanding of distribution systems in general and of the distribution problems of particular shippers. The better each side does its job, the lower will be transport and distribution costs and the greater the profits for all concerned.

3 Both sellers and buyers are confronted with the problems of mutual accommodation to change. But as a matter of hardheaded business policy, the carriers must be prepared to be the primary accommodators. Such accommodation will be most successful if backed by intensive research efforts that throw light on competitive relationships and on shipper purchasing policies.

4 We have noted a number of areas where regulatory policy is of crucial importance, both for rate modifications and for coordination. This suggests that all who are concerned with distribution would be wise to take a lively and informed interest in regulation policy. To be effective, this interest must be supplemented by informed judgments, so that regulation will advance the development of a transport system that will best serve the needs of distribution.

DANIEL L. SPENCER

India's Progress: *Plan Three*

AFTER TEN years of planning, there is widespread recognition of India's role as the standard bearer of the noncommunist way of economic development. This recognition was somewhat late in coming. In the early 1950's, India's neutralism and "socialistic pattern of society" was misunderstood and disliked in the U.S.; it was felt in many quarters that, to be acceptable, a nation's posture should be close to that of the U.S. both politically and economically. Now, at the end of a decade of experience with developing economies, India is better understood in this country. Since its population comprises one-third of the population of the noncommunist underdeveloped world, it is realized that India's development is crucial, both in absolute terms and in exemplary terms. Further, the U.S. has come to understand the need for external assistance to a developing country. It is argued that low-income countries cannot generate the savings to carry them over the hump into a self-sustaining growth, and that transfusions of massive aid must be provided—at least for some considerable period.

Broadly speaking, this logic is sound and pertinent to India because of its relatively sophisticated levels of organization and plans. Yet the performance of the last ten years must give even the most sanguine friend of India cause for some concern. No one can deny that there has been solid achievement, but when one considers the needs of this poverty-stricken, long-stagnant economy, and notes the strides taken in Communist China to overcome similar problems, these accomplishments are somewhat minimal. In the light of the current U.S. disposition toward supporting India's plans, it is important to balance the gains and gaps in performance as well as to theorize on the results of the next plan period.

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ACHIEVEMENTS

In terms of many absolute criteria, there has been progress during the ten years of planning in India. The First Plan rehabilitated the economy after war and partition by stressing increased agricultural production. It introduced important programs, such as community development and land reform, and began work in such areas as transportation, communications, irrigation, and power. National income rose by 18 per cent and per capita income by 11 per cent, but a large part of these gains was due to favorable monsoons. There were gains in virtually all existing consumer industries, which increased and diversified production.

The Second Plan, a much larger effort, extended the foundations of the First Plan and aimed at expanding heavy industry. While many difficulties have arisen and most goals will not have been met, concrete progress has been achieved in many sectors. Under the Second Plan, national income has risen by about 20 per cent, per capita income by 10 per cent. Over-all, the authorities hold that the economy has been greatly strengthened and is ready for rapid development.[1]

Some details of both plans will serve to illustrate the achievements.[2] For ten years of India's planning ending March 31, 1961, national income has risen by 42 per cent and per capita income by 20 per cent. Agricultural production is greater by 35 per cent, industrial production by at least 50 per cent. In consumer goods industries, sugar production has doubled, paper production has tripled, bicycle production has increased tenfold, and there have been gains in practically all other industries. Moreover, substantial diversification has introduced many new products—for example, DDT, antibiotics, and newsprint. Heavy industry, the pride of the planners, has had solid increases as shown in Table 1.[3]

TABLE 1

Producer Goods
(in thousands of tons)

Commodity	1950-51	1960-61 (expected production)
Finished steel	1,000.0	2,600.0
Aluminum	3.7	17.0
Diesel engines°	5.5	33.0
Electric cables (ACSR) conductors	1.7	18.0
Nitrogenous fertilizers (N)	9.0	210.0
Sulphuric acid	99.0	400.0
Cement	2,700.0	8,800.0
Coal	32,000.0	53,000.0
Iron ore	3,000.0	12,000.0

° in thousands

Generating capacity was 5.8 million kilowatts, against 2.3 million kilowatts at the start of the planning era. Total freight traffic was 162 million tons, up from 91 million. Miles of surfaced roads increased from 97,000 to 144,000, shipping tonnage from 390,000 to 900,000, post offices from 36,000 to 75,000, and telephone connections from 168,000 to 475,000.

In social services, the number of schools rose from 223,000 to 385,000, and the percentage of 6- to 11-year-old children in schools from 43 per cent to 60 per cent. Hospitals and dispensaries increased to 12,600 from 8,600. Technical schools are admitting four times the number of students they did ten years ago. With improved facilities, scientific research has progressed very well, particularly in the field of atomic energy.

THE GAP IN PERFORMANCE

Despite this seemingly solid progress, there are several less favorable aspects. First, questions have been raised about the figures themselves.[4] It is held that progress reports on the Second Plan have been very meager, and that the last one, which is contained in the Third Plan outline, gives figures that exaggerate the progress as recorded in previous reports. While evaluation of this charge is difficult, it

[1] Government of India. Planning Commission. *Third Five Year Plan, A Draft Outline*, p. 17.

[2] The following data are official estimates based on expected figures.

[3] *Third Five Year Plan, A Draft Outline*, p. 19.

[4] J. M. Lobo-Prabhu, "Draft Third Plan X-Rayed," *Commerce* (Oct. 1, 1960), p. 588.

TABLE 2

Industrial Production
(in thousands of tons)

Commodity	Original Target	Expected Production at End of 2nd Plan
Steel	4,300	2,600
Cement	13,000	8,800
Coal	60,000	53,000
Cloth*	8,500	5,000
Sulphuric acid	470	400

* in millions of yards

does appear that there are discrepancies in the latest performance data as compared with earlier figures, but probably such exaggeration as may have taken place, while not desirable, does not seriously distort the general picture. Even if the performance data is correct, it still falls short in several ways, namely, in regard to what has been planned, to India's needs, and to what is happening in China. Moreover, certain broad objectives of the planning are not being realized.

The target for the rise in national income was 5 per cent per annum, but, assuming the reported statistics are accurate, the actual figure will be 4 per cent per annum.

Many physical targets have simply not been reached—often in important fields. Some important examples are shown in Table 2. It is true that these targets will be realized in the next plan period, but only at the cost of postponing the realization of future targets. The adverse psychological effects that these lags have on the population are also not to be discounted.

The broad objectives of the plans have not been accomplished—at least, not adequately. Thus, the provision of 8.0 million jobs that was hoped for will probably be, at the most, 6.5 million jobs, and urban unemployment will continue to increase. A reduction of inequalities in income and wealth still appears to be a remote hope. Self-sufficiency in food also seems an ever-elusive goal.

Moreover, relative to India's needs, the gains that occurred seem very small. The U.S., with less than half the population of India, has an annual steel production of about 100 million tons; Russia produces 65 million, and Germany and England more than 20 million tons each. India's labors have yielded a mere 2 million. Similar contrasts could be drawn for many other items.

Furthermore, in terms of what is happening in China, India's performance is indeed minimal. Though both started from about the same base in the early 1950's, Communist China's development seems much more impressive than that of India. It is true that recent agricultural failures in crops and troubles in the communes detract from the general economic picture in Communist China, but the industrial performance has leaped ahead. A recent, authoritative article by a well-known analyst demonstrates that China has been winning the "race" in Asia in virtually all lines of industrial production.[5]

MAJOR PROBLEMS

The gap in accomplishments in India stems from three weak areas of the economy: food, foreign exchange, and the difficulties involved in institutional change under a democratic regime.

Food shortage is a central factor inhibiting planned performance. The First Plan seemed to have solved this problem when the rising level of prices broke sharply following good harvests. Yet, the experience of later years has belied this seeming progress; the food supply simply has not risen rapidly enough to meet the increasing needs of the people.

Despite some seasonal variations, the tonnage of food grains has risen from 52.2 million in 1950-51 to 73.5 million last year, and is anticipated to be 75.0 million in 1960-61. But relative to the expanding needs of increased income and growing population, this substantial increase is not enough. The low level of

[5]Details of the contrast in performance may be found in Wilfred Malenbaum, "India and China: Contrasts in Development Performance," *American Economic Review*, XLIX (June, 1959), 284-309.

food consumption (1,400 calories of cereals per person per day) has meant that the increment of extra income spent on food has been much larger than the planners expected. Another wrong assumption was the size of the additions to population. The Second Plan originally assumed a 1.2 per cent increase in population; the rate seems now to be about 2.0 per cent per annum. Thus the pressures of food demand and rising population have been responsible for a continuous rise in price levels.

The rising prices of food as the chief component in the rising cost of living upset the planned calculations. The increased prices directly affected the people, causing widespread feelings of hopelessness and disappointment in the plan. Indirectly, the price rises set off a spiral of higher wages and higher costs and caused a cut in plan targets. Personal savings and tax collections have also lagged behind what was expected. The planned expenditure was pruned in 1958 by $600 million, but whatever the spending on development achieved in real terms, it must be 20 per cent less because of this rise in the price level. Even now, the inflation continues with indexes standing as much as 25 to 50 per cent above the prices prevailing at the start of the planning era.[6]

Another crucial factor hampering plan fulfillment has been the sudden drop in reserves caused by a burgeoning increase in imports. Whereas the First Plan had shown an average deficit on current account of only Rs. 25 crores[7] ($50 million) annually, the Second Plan corresponding figures have averaged Rs. 400 crores ($800 million) in 1956-59. Consequently, despite foreign aid and a special emergency operation by the Consortium of India's creditors in 1958-59, reserves are at an all-time low. Various factors have contributed to the heavy rise in imports. Poor harvests necessitated higher-than-planned food expenditures. Increased military expenditures stemming from Pakistani hostility (widely attributed to U.S. rearmament of Pakistan under treaty obligation) required increased foreign orders. Poor timing of import authorizations, a weak licensing system, and a general rise in imports for maintenance of an expanded economy were other contributing factors.

Naturally the Indian planners clamped down with tighter controls on imports, which in turn forced the curtailment or cutback in projects planned. A core-projects concept was developed that led to the shelving of many important schemes. Extensions and delays became quite commonplace as timing of import authorizations became more stringent. Foreign assistance helped, of course, but there was so much earmarking of funds for projects that little "free" foreign exchange existed for making vital allocations. The U.S. and others wanted to help projects on which their label appeared, though general balance of payments assistance was badly needed by the harassed planners. In any case, the lack of foreign exchange has seriously hampered planned effort.

In addition to the food and foreign exchange factors, all kinds of organizational difficulties have emerged to plague planned



[6]On a 1952-53 base in September, 1960, the index of wholesale prices stood at 125.3; index of raw materials at 150.0; and the manufacturers' index at 126.0.

[7]Crore = ten million rupees.

achievement. This institutional stickiness expresses itself in many ways, for example, the poorly planned projects that, in the original program, overlooked such essentials as local canals for the irrigation project and a railhead for the port development. Then again, the execution of projects waits on endless delays caused by lack of timing, priorities, bad statistics, bureaucratic red tape, and the caste nepotism that pervades much of Indian economic life. Perhaps most serious is the nature of the dominant political party. This party was revolutionary in its youth when they rallied around their great leader Gandhi and won India's independence. Now, in its old age —and, with few exceptions, the leaders are all well advanced in years—they have become a conservative force that tends to maintain a *status quo*. They fail to appoint economic tsars who will cut through red tape and will insist upon attainment of targets. This lack of dynamism is apparent to all observers of the Indian scene.

THE THIRD PLAN

Despite the difficulties of the last ten years, the leadership has launched another investment effort of $21 billion. This Third Plan is as large as the First and Second Plans combined, and it involves the same model of growth. The public sector carries the main thrust again, with emphasis on heavy industry. Private economic activity is again expected to be stimulated by heavy government expenditure and to provide 40 to 45 per cent of the additional investment. The Third Plan will continue to rely on foreign resources for about one-third of the investment, just as the Second Plan did. Such achievements as were attained, then, were dependent on sources outside the economy to a great extent.

Projections

What is likely to happen over the period of the Third Plan? Assuming (quite safely) that foreign support on the scale planned is made available, the same sort of economic performance as has prevailed will continue. There will be some gains, but performance will fall short of goals. Food will still be short, inflation will continue, and people will be very dissatisfied and disillusioned. The foreign exchange bottleneck will continue, and more emergency help will probably be needed. Plans will be pruned again and even "core" projects held up. Heavy urban unemployment will continue when the Third Plan, like the Second Plan, fails to provide adequate jobs. Underemployment will plague the teeming villages that are unrelieved by a serious birth control program. Redistribution of income will continue to be an ideal embodied in the Constitution and in the phrase "socialistic pattern of society." The present elite will stay on top and play political games of shifting important jobs around, while their nephews will be scattered throughout the working level below. No red-tape cutting, nephew-firing, or appointing of economic tsars will be done in order to bring projects to fruition on time. In short, the same difficulties of food, foreign



exchange, and institutional obstacles will cause the same lags in performance.

On the other side of the coin, an industrial economy will slowly come into being and gradually move into a self-sustaining stage that, in turn, will become progressively independent of foreign aid. What was for many, many years a static society has become and will continue to be reasonably dynamic as it shifts from an agricultural to a modern industrial society. Moreover, this development will take place without the forced draft of a regimented communist or rightist totalitarianism or, for that matter, any single swift action. India's progress will, instead, be a concrete, though modest, answer to authoritarian change.

What can Americans do to speed it up? Primarily, they can increase their aid and be patient. It may perhaps be possible to hint to the Congress Party elites that they should be a little more progressive in attacking vested interests and allow more scope for private economic activity. Perhaps we may urge more attention to annual plans and details of specific implementation of plans. But, it is best for Americans to advise little and be ready to assist more, in both the quantity and character of our aid. In particular, there should be more balance of payments aid as against aid for specific projects. Longer-term commitments rather than the present year-to-year, hand-to-mouth variety are needed. Obviously, military aid to Pakistan should be continuously re-examined in the light of its repercussions on India. A regional plan—the long talked of "Marshall Plan for Asia"—must be worked out.

The U.S. must decide whether India's modest progress is adequate and worth underwriting with further aid. If it is, we must be ready to allocate at least 1 per cent of our gross national product to India and other countries that are attempting to develop under their own initiative.

> THIS is indeed India; the land of dreams and romance, of fabulous wealth and fabulous poverty, of splendor and rags, of palaces and hovels, of famine and pestilence, of genii and giants and Aladdin lamps, of tigers and elephants, the cobra and the jungle, the country of a hundred nations and a hundred tongues, of a thousand religions and two million gods, cradle of the human race, birthplace of human speech, mother of history, grandmother of legend, great-grandmother of tradition, whose yesterdays bear date with the mouldering antiquities of the rest of the nations—the one sole country under the sun that is endowed with an imperishable interest for alien prince and alien peasant, for lettered and ignorant, wise and fool, rich and poor, bond and free, the one land that *all* men desire to see, and having seen once, by even a glimpse, would not give that glimpse for the shows of all the rest of the globe combined.
>
> —*Mark Twain*
> FOLLOWING THE EQUATOR

WILLIAM R. DILL

What MANAGEMENT GAMES Do BEST

TODAY THERE are more than a hundred management games being used in executive development; they range from simple games that can be played at home as a substitute for bridge and poker to games that can keep teams of twenty men busy night and day for a week or more. Hundreds of executives have taken part in games at the American Management Association seminar, in university executive programs, or within their own companies. The self-styled "experts" on games have built up a large bibliography of articles and speeches in the last five years.[1]

With games, experts, and opinions aplenty, there has been surprisingly little systematic talk and even less reliable evidence about what games teach or how they should be chosen or designed to meet specific training goals. "Gaming" has been promoted and accepted, but sometimes with more enthusiasm than sense. Yet beneath the promotions and promises, there is general agreement that management games rank as one of the most promising educational innovations of the last few years and perhaps the most significant one in management training since the case method was introduced four decades ago.

Games can be used in programs of executive development in three ways:

1 To discredit old ways of thinking and to build up interest in learning

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[1] The most comprehensive general surveys, evaluations, and bibliographies now available of management games include: K. J. Cohen and E. Rhenman, "The Role of Management Games in Education and Research," *Management Science,* VII (January, 1961) 131-166; *Simulation and Gaming: A Symposium* (Management Report No. 55; New York: American Management Association, 1961); *Proceedings of the National Symposium on Management Games* (Lawrence: Center for Research in Business, University of Kansas, May, 1959); C. J. Craft and others, *Management Games* (New York: Reinhold Publishing Corp., 1961).

2 To give men experience with the problems that managers face

3 To help evaluate a manager's performance.

In brief, games can be used to stimulate, to simulate, and to test.

GAMES TO STIMULATE

When the American Management Association introduced its first game a few years ago, it was undeniably fun to play. Their formula was a good one, and it has been imitated by many others: devise a game that is easy to learn but not so easy to master. Set it up so that the people who play it will have top management titles and will make top management "decisions." Play it in a situation where spirited competition among teams is encouraged, but where no team or individual is clearly a winner or loser. Play the game intensively on a full-time basis, for a day or a week when the players have nothing else to do.

Something that is fun to do is not to be scorned. It is obviously a fine innovation if your idea of executive development is simply to assemble people in an attractive place for a vacation at company expense. But it is also good for starting a more substantial program on the right foot—to get participants acquainted and working together, to remind them of the learning they still have to do, to stir them up and start them thinking. A game can set the stage for the work to follow. Likewise, the right game, administered with efficiency and showmanship, can later restore interest in a program where, for various reasons, enthusiasm drops off. In one of the most imaginative and successful executive development programs in Europe,[2] a variant of the first AMA game is being used to help hold the attention of participants during the final weeks when other approaches to learning have lost their novelty.

[2] This is the "Solstrand" program started by Professor Rolf Waaler and the Administrative Research Foundation at the Norwegian School of Economics and Business Administration at Bergen, Norway.

If your aim is to stimulate the men in a training program, then the following considerations are probably most important in selecting, developing, and conducting a game:

First, the game should fit the men who will play it. It must be complex enough to be interesting, but not so difficult that it takes hours of advanced study to learn to play. It ought to seem like a reasonable test of their skills and experience. If it has to be built around a kind of industry different from the one they are working in, it is probably better that the industry be completely fanciful, rather than an approximation of an industry that they recognize and care little about.

Second, the game should be easy to administer with the given facilities (staff, space, computer, and so on). Teams may get a perverse satisfaction from an occasional machine breakdown or umpire's error, but it is hard to maintain interest and competitive spirit if teams have to wait long periods of time for results or if they discover that they have been the unfortunate victims of a "bug" in the computer program or an error in interpretation of the rules by a statistical clerk.

Third, the lessons that the game teaches should be fairly obvious and pertinent to the contents of the rest of the program. If, for example, a goal of the game is to break up players' traditional patterns of thought, you want a game that tempts players to follow their own prejudices but rewards them for taking a fresh and original point of view.

Fourth, the players should "respect" the game. Although this item has lower priority than the others, it is probably most exciting for players to look forward to taking part in a well-publicized game (such as the AMA, IBM, or McKinsey exercises) or in a game developed within their company. If the game is a widely used one, you may have the advantage of being able to compare the performance of your players with the records compiled by teams elsewhere. If the game has local origins, players may be more willing to accept the game's rules and challenge.

The games that are best as stimulators are not necessarily good simulations of what executives are called upon to do. Running a company involves more than working as a three- or four-man committee to make a dozen decisions every fifteen minutes about gross levels of production, gross investment in research and development, and the like. A manager has a more substantial job. At least one large company has dropped simpler games from its training programs because it could not get a reading on anything but their entertainment value. A developer of one of the best-known games admits that about the most his game does is to bring about what he calls "spiritual purification"—it loosens up men for other kinds of training.

GAMES TO SIMULATE

If the purpose of the games is to simulate the job of an executive and the problems he faces, specifications other than simplicity and fast pacing become desirable. Not all managers get ulcers, but being a manager is not at the same level of entertainment as a cold hand of poker or a game of touch football. Management involves hard work. It requires analysis and attention to detail as well as a willingness to make judgments under the pressure of time. It means an ability to plan as well as to act, to innovate as well as to operate in a stable environment, to explore and evaluate alternatives, and to carry out decisions.

Developing Skills

A game that aims to give a man the experience of being a manager is one that is designed to develop the following:

The ability to recognize new situations for what they are—to question, to probe, and to analyze before making assumptions or starting to carry out programs developed in another situation

The ability to set goals, to use these goals to distinguish important from trivial information, and to plan and control the execution of his own job and the job activities of others

An unwillingness to sit back and work with only the information available to him, a skepticism about the quality and completeness of what he is getting, and a willingness to define what he really needs and to go out and find it

An understanding of the relationships among specialized activities within a firm, along with a willingness to go after new concepts and to broaden his horizon of awareness and interest

A willingness to assume effective responsibility—whether as "chief" or as "Indian"—for the success of efforts that involve efficient and cooperative interaction among a large group of people with different kinds of experience and status

An ability to assess and classify experience, to delegate work to subordinates, or pass it on to a successor in ways that will keep the organization headed towards its goals.

Such specifications call for a relatively complex game—one that provides players with a



great deal of information about their environment; one that gives them the task of evaluating, interpreting, and perhaps regrouping this information; one that requires decisions at several levels, from long-range policy and investment decisions to those about specific problems within production, marketing, and finance departments. Such a game would also provide enough work to keep a large team busy and to encourage specialization of function and differentiation of authority levels within the organization; it would test a team's ability both to manage a going concern and to adapt to change.

An effective training game should provide its players with ample information, but not all of it in the form of direct accounting statements from a computer. Great amounts of information make the important problems hard to dig out and, in addition, make it difficult for one man to run the organization. Both effects can be accentuated further if the inputs to the team are divided, so that no one member of the team has direct access to all the material that he needs.

Most simple games present teams with accurate information at no cost. In a real training game, less information should be provided automatically than most games do provide. More of it should be available on an optional basis, but at a price. Reasonable degrees of error and bias should be built into the information itself (and even perhaps into the functions that tell the team how much the information costs).

Players need not always know exactly what kinds of information are and are not available to them. Some experimentation is in order in giving players more freedom to pose questions to the umpires or to the computer about information they have decided they need.

Decision-Making

A second important dimension of a training game is the decision structure that it provides. The measure of a good game is not the number of decisions but the number of kinds of decisions that a team must make. It is important, for example, to build into a game the opportunity to make long-range capital investments in machinery, buildings, and the like; but if you have built in such decision opportunities for rolling mills, you are adding little to the game by adding a decision opportunity for hydraulic presses.

The game should provide not only for making decisions but also for determining which decisions need to be made and for developing and implementing rules to simplify decision-making. In one of the AMA games, for example, the computer is perfectly capable of running the company and keeping it going on a routine basis. Executives do not have to tend to all decisions every "quarter" of play. Their job is to decide where their attention and participation is most needed and to set up new policies in these areas. In our game, players first have to learn what duties must be tended to "monthly" to keep their company going.[3] Once a routine is established, we simply ask them to turn in decisions or decision rules for three months at a time. These must be policies or rules that "subordinates" can follow, though, depending on what the intermediate results are after the first and second months. They are judged not on the elegance of their policies but on the end results. They must explain their rules and policies to subordinates in advance of plays, but they have no further control on how the subordinates interpret the rules. Since they have no further contact with their subordinates for three moves, poorly defined or poorly explained rules will get them into trouble.

Environment

A third dimension is the environment of the "world" against which the teams are pitted,

[3] Descriptions of the Carnegie Tech management game referred to frequently in this article can be found in K. J. Cohen and others, "The Carnegie Tech Management Game," *Journal of Business*, XXXIII (October, 1960), 303-321; W. R. Dill, "A New Environment for Training Decision Makers," in E. A. Fleischman, ed., *Studies in Personnel and Industrial Psychology* (Homewood, Ill.: The Dorsey Press, Inc., 1961); W. R. Dill and others, "Experiences with a Complex Management Game," *California Management Review*, III (Spring, 1961), 38-51.

that is, the computer model or the rules that the umpires use to determine results. This is important, for it is reflected in the kinds of information that the teams receive and the kinds of decisions they must make but it is important in other ways, too.

The world should be complex so that results will not depend inordinately on one or two kinds of decisions that the team may make. On the other hand, it should not be so complex that it cannot be analyzed and does not respond to action. An unresponsive environment may be a realistic imitation of some businesses, but it is damaging to team motivation. The world should include surprises for the teams, but these should not be totally unreasonable in their eyes. A random model—such as the McKinsey game uses—can produce demoralizing results for players whose experience tells them that the environment is relatively stable.

The environment against which players compete also ought to put a premium on action that is well planned and intelligently coordinated over a period of time. Proctor and Gamble accomplishes this in some of their scheduling games by charging teams high costs for each change in the level of production; we have similar penalties built into ours. We also lag the effects of expenditures on such things as advertising, maintenance, and research, and the effects of hiring and firing on productivity so that actions have to be planned well in advance of anticipated results.

For some products, four playing periods are necessary from the time materials are bought until finished goods are sent to consumers. Other planning sequences cover up to a year or more of simulated play. Players on one team for which I was director projected forecasts of sales, income, and balance sheet position two to three "years" (24 to 36 moves) ahead in order to get their board's approval for a long-run dividend policy.

To meet the kinds of requirements we have been specifying, the environment almost has to be simulated by computer. Human umpires and clerks are too slow, too expensive, and too inaccurate. Some of the simpler computer games can be calculated by hand, but the time for doing so increases from a few minutes by machine to 45 minutes or more per move. The Carnegie game requires about 45 minutes of time on an IBM 650 to generate one period's results for three teams in competition with one another. It would be impossible to run except by machine.

Yet, although the computer is necessary for a complex game, our experience has convinced us that the kinds of things that a computer can generate provide only part of the environment with which a trainee should be confronted. One major shortcoming of most game experiments today, one that can be easily corrected within the framework of existing games, is that there is not enough attention to the live interactions that managers have with other persons even within the playing teams. Attempts have been made to provide more of this kind of experience.

I have already mentioned the attempt in our game to force players to develop instructions, policies, and decision rules that men who are not members of management can use; to teach these rules to those who will apply them; and then to live with the results of actions taken by subordinates in the absence of the players who manage the team. (So far, poor rules or poor training has led to passed dividends, unauthorized liquidation of investments, unwanted changes in production schedules, and disastrous pricing decisions for some teams.)

Members of the Program for Executives at Carnegie last spring did not apply to the computer for a bank loan; instead they applied in person to a team made up of faculty members and Pittsburgh bankers, presented their case, and negotiated the terms of the loan. The terms then became computer inputs and part of the team's record.

After several moves with the Carnegie game, Tulane University has confronted players with demands from a union representing hourly production workers for higher wages and other fringe benefits. A faculty member with long experience as a mediator and arbitrator in labor disputes represented the union

and, under the threat of a strike deadline, negotiated new contracts with the game teams. The teams had to live from then on with the additional labor costs that the negotiations incurred.

Last year, in our graduate program, we asked groups of first-year graduate students who were not playing the game to audit the books of the second-year men who were. They combined a traditional audit with a general management survey and analysis. Several benefits of this are already apparent. In the view of a partner in one of the city's leading C.P.A. firms, the students who did the audit learned more about the philosophy, the tactics, and the standards of a good management audit than they could have learned in several semesters of accounting. Not the least that they learned were some of the problems involved in getting the management group to accept a report that was highly (and rightfully) critical of management. They came to appreciate the distinction between responsible and irresponsible criticism. The teams learned how their performance looked to outsiders, and they learned some of the standards to which they might expect to be held in the real world.

A game for use with federal government executives was developed by Norman Martin and John Howard Sims at the University of Chicago. It placed a great deal of emphasis on testing men's reactions to a day of crisis. A number of outsiders were on hand to harass the top echelons of management with news that one of their best employees was about to accept a job in private industry; with word that the Philadelphia warehouse had burned down; with unannounced visits from congressmen and the FBI; with a slowdown among the secretarial staff; and with assorted other problems. When the players were inept, the net result of a day's work was chaos.

In using the Carnegie Tech game with graduate students at Carnegie, Indiana, and Tulane, a board of directors was established for each team. The job of these boards was not to teach men how to play the game, but to question them on how they are playing it, and, as they learn to do a better job, to keep raising the standards by which their performance is judged.

Boards have been important for three reasons. First, there is a principle in learning theory that the points made explicit stick longer with trainees than the ones not brought to the surface by discussion, experience, reflection, or argument.

Second, the boards of directors can emphasize that analysis is as important as action for success in top management. If a man has to explain to an outside board why he thinks 50 per cent is a good dividend payout ratio, he is less likely to give an arbitrary figure than if he only has to justify it to himself.

Third, a key element to executive success is the ability to present and justify ideas to others. Suppose we could trust our finance officer to do a careful job of analysis in arriving at 50 per cent as a payout ratio. In real life, his analysis may be to no avail unless he can get his superiors to accept it. The directors can stimulate a well-planned and substantial presentation of facts, opinions, and recommendations.

Considerations

The possibilities for other game exercises are many. For a program aimed at men who have had no supervisory experience, for example, why not give them the opportunity to hire, train, and control some clerical people to do routine accounting and analysis? Or if the game is rich enough and complex enough for players to employ men with knowledge of modern operations research or management science techniques, why not let them commission special staff studies, both as a means of training the staff men and of educating future managers as to the potential of these new techniques?

Another intriguing possibility is to permit teams to negotiate with one another over the long run on the licensing of products, the sale of equipment and buildings to one another, or the terms of mergers. If it can be done without creating lasting personal frictions among the players, it might also be instructive to let

teams hire men from one firm to another, setting up an open market for managerial talent.

Personnel men and training directors have a major stake in the success or failure of management games; yet as a group they have contributed relatively little to the design of games. I know of only two games that involve indices of employee morale and that provide basic structure to generate employee grievances and strikes. I know of no game that really poses questions of organizational design or organizational efficiency, except within the small team of players who make up the top management group. There are specialized games to teach concepts and strategies in marketing, production, and finance, but I know of none in personnel, labor relations, or organizational planning.

To get the most from a game in an executive development program, two further conditions are perhaps obvious but worth mentioning since they are often overlooked. First, there should be adequate time and leadership for discussing the results of the game and the experiences that players are having. The men who most need training are the men who do not learn easily and automatically from their own experience. Sessions may be held with individual teams at intervals during play of the game to review their progress in organizing and in working toward their goals. Sessions may be held with several teams present to discuss what are appropriate standards of team performance and, after the game, to compare the teams' objectives and strategies with their results.

Second, efforts should be made to integrate the game with what the men do on the job. Our experience at Carnegie shows that three kinds of integration work well: (1) asking players in discussion sessions to draw on their experience in the game as data for exploring the meaning of new ideas and concepts; (2) providing opportunities and incentives for men to use ideas and methods gained from lectures, discussions, and readings in their play of the game; and (3) examining the computer model in the game as a way of teaching players how companies and industries function in an economy and how to construct games and simulations of their own.

These, then, are the major specifications for games that are meant to simulate what the manager does. They are offered, tentatively, as plans that have worked well for us and for others. I want now to re-emphasize one theme that underlies them all.

My concept of what an executive development program should do and of what a game in such a program should do emphasizes hard work, a fair degree of stress for the participants, and an open (and, if necessary, a critical) evaluation of how they are doing. For various reasons at Carnegie, we have pushed our students harder in playing the management game than we have our executives. The executives have more freedom to pace themselves and to set their own standards of performance. It is not particularly surprising, as a result, that a few executive teams have only half-played the game and that the best teams in a comparative match have been made up of students, not executives.

These are harsh words to implement where senior executives as students may outrank the trainer and where they are looking for a respite from the stress and strain of their regular jobs. On the other hand, it seems as clear for mature and experienced men as it does for college students that real learning involves hard work and that one does not learn to cope with the stresses and strains of a management job except by experiencing them and conquering them.



A well-designed, well-run game does not offer an easy path to learning; but it offers a way to present some of the problems, challenges, and stresses of managerial work to men who must learn them under conditions where the costs of failure, to the man and the individual, are real but much smaller than in real life.

GAMES TO TEST

The third possible contribution of games to executive development is as a tool for assessment. One company, Proctor and Gamble, has tried this year to evaluate college students employed for the summer by their performance in a game exercise. Other companies are also using games to judge the potential of employees. The motivation is much the same, I think, as that which leads us to try "stress interviews" or that which led the Office of Strategic Services in World War II to test men by putting them through mock-ups of situations they might have to face behind enemy lines.

The promise and the problems are roughly the same. It is reasonable to use games to assess men if—but only if—three conditions are met:

1 We must have a criterion so that we know what kind of men we are looking for. (This gets increasingly difficult as we move into the more individualized upper echelons of management.)

2 We must have a theory, a system of measuring behavior, and some experience that will let us interpret the meaning of the behavior that our candidates display.

3 We must have adequate control over the way the game develops so that we understand the stimuli that the man is responding to and the reasons why he chose to behave as he did.

But until we get more experience, it is probably best simply to observe what happens in games, to try to infer the reasons for various people's behavior and for their success or lack of success, and then to pool our observations with the impressions we have from other sources. The best measures to try to derive from observing the players in a game are probably not the "traits" for which we search with objective personality tests and about which we talk so vaguely in management. Instead, we can often see the players duplicating the specific behaviors we would expect of a good or a poor manager. At Carnegie, we think that the game has helped us to distinguish men who have an aversion to routine work from those who seem greatly attracted by it. We think it has helped us to identify men who take their tasks seriously and who work hard and men who show very great or very little insight into how to manage critical relationships with their peers. The presentations to the boards have helped to identify men who have the ability to express ideas clearly, to get jobs done on schedule, and to argue their positions forcefully.

The danger is that we may assume that behavior displayed in the artificial environment of a game will also be displayed in the real world of management. We need to keep in mind that this was the basic problem in the O.S.S. testing program, which, perhaps more than any other to date, has explored the issues that we would face in using games to predict executive success. Even in a carefully planned and varied set of "test" situations, the O.S.S. found that it was not able to anticipate many of the conditions that the men would face behind enemy lines. Similarly, none of the business games now in existence lets us anticipate with any degree of adequacy the world that the men we select for management will perform in five to twenty years from now.

At Carnegie we have examined the personality characteristics of individuals who turn out to be most influential on their teams and of members of the teams that have done best in the game. Raw intelligence, which counts highly in academic course work, is happily not a good predictor of success in the game. I say "happily" because we have ample evidence that among college graduates intelligence alone is not a good predictor of managerial potential. None of the other personality variables that we have looked at is related either to

individual or to team performance. The qualities of a good game player may be as elusive as the qualities of a manager.

THE COSTS OF GAMING

Relatively little has been published about the costs of gaming. Clearly, it is expensive to start from scratch—to design and program a management game, to prepare and revise manuals of instructions for players and administrators, and to experiment with ways of exploiting the game's educational potential. The company that wants its own game, even a relatively simple one, must be prepared to make a substantial investment of time, money, and talent. The company that wants a complex game modeled after its own problems will have to make a very large investment.

To develop the Carnegie Tech management game, six faculty members worked part time for two months to map out the basic design. At least three man-years have gone into the initial programming for the computer, into debugging efforts, and into modifying the program so that the game could be used more widely. The manuals for players have been through several revisions, and it will take many more months to write up a complete manual of instructions and advice for others who use the game.

On the other hand, in the process of developing a game, companies obtain many important side benefits. By bringing line executives, staff specialists, and computer technicians together to plan what the game should be like, it is possible to:

> Provoke a thorough review of the purposes and methods of training programs within the organization
>
> Create closer working relationships between men who know the company and its problems and the newer, younger employees who have the special skills needed to construct the game model and to program it for the computer
>
> Explore in detail many important questions about the effects of managerial decisions and about the interdependence between the company and its environment.

The out-of-pocket costs (and the indirect gains) are much less if a company decides to use one of the many games already available. Some of the simpler games—both with and without a computer—can be run for small groups by one man who has taken the time to learn how to manage them and to anticipate and prepare for some of the emergencies that may arise. A noncomputer game, though, is not necessarily easy or inexpensive to run. It probably takes more advance planning, more preparation of playing materials, and more man power to referee the game and check players' calculations in a concentrated run of the McKinsey game, a noncomputer game, than it does in a similar run of the IBM game, which requires a computer. The real costs for man power and for computer time on any of the games are hard to estimate, because they depend in each situation on the degree to which the men and computers would otherwise be involved in gainful work for the company. The costs of even a complex game for a company that has training department personnel and a large computer standing idle some of the time may be very low.

The right game for stimulation is one that is relatively simple to learn, easy to administer, not very subtle in what it teaches, and basically interesting to the men who are to play it.

Games can also be used to educate—to simulate the opportunities, the challenges, and the pressures that an executive is confronted with and to provide a setting in which men can develop managerial skills. These skills include an ability to adapt to new situations; an ability to set goals and to work from these goals in defining problems and planning action; a skepticism that causes men to ask questions and to go out looking for information; an understanding of relationships among specialized jobs in the firm; a willingness to work responsibly and effectively with others; and an ability to learn from experience and to learn how to organize and transmit experience to others.

THIS ARTICLE might have been entitled "Management Games—Recreation or Education?" It was meant to convey the excitement and the promise, along with the problems and the confusion, that surround the discussion of what games can contribute to executive development.

We have progressed farthest in using management games as a recreational tool. When used to start an executive program or to bolster it toward the end when interest in other activities lags, a management game that is administered with efficiency and showmanship has great powers to stimulate and to entertain. It can help to shake men loose from old habits and stir their enthusiasm for new learning.

The game that will best develop these skills is a complex one that provides players with lots of information, asks them to make a variety of decisions, and calculates the results of their actions in an elaborate and realistic way. Such a game puts a premium on planning and on intelligently coordinated action over a period of time. Players are pitted against a "model" of the world, simulated with the help of a computer; but in addition, they must deal face to face with other groups: subordinates, bankers, boards of directors, labor representatives, and the like. The greatest need in the games we now have is for more flexibility in their design and for more stress on decision problems in the areas of organizational design and personnel management.

Where games are used to develop managerial skills, players should have time and incentives to discuss their experience. What they do in the game should be integrated with other parts of the training program. Learning is most likely to be effective if the men are challenged to work hard and are not protected in an extreme degree against stress and possible failure.

The wisdom of using games to evaluate managers is not yet clear. It is hard to predict who will do well in a complex management game just as it is hard to predict who will do well on a real management job. Nevertheless, observations of how well men do in a game may be a valuable supplement to other information that is available to assess their potential.

THE CHESS BOARD is the world, the pieces are the phenomena of the universe, the rules of the game are what we call the laws of Nature. The player on the other side is hidden from us. We know that his play is always fair, just, and patient. But also we know, to our cost, that he never overlooks a mistake, or makes the smallest allowance for ignorance.

—Thomas Henry Huxley
A LIBERAL EDUCATION

ALAN A. ROBERTS

Applying the Strategy of Market Segmentation

MARKET SEGMENTATION is the strategy of dividing markets in order to conquer them. Its philosophy is "something for everybody," within practicable limits. As a definition, this is less formal but more useful than those found in marketing textbooks.

Textbooks define a market segment as any subsection of a total market that is worth cultivating. They add that in order to implement a strategy of segmentation a firm must first identify the segment and then take marketing action based upon that identification. Unfortunately, bookish definitions like these do not cast much light upon the process whereby businessmen decide whether a segment worth cultivating truly exists. Moreover, they seldom give a basis for relating the single decision of whether or not to segment a market to any dynamic, over-all corporate strategy that implies continuity in this decision-making process.

It is well known that all companies more or less segment their markets. What we are interested in is this: Are the company's criteria for deciding whether a submarket is worth cultivating so general that the decision to segment is frequently made, or are they so specific that the company seldom moves in this direction? Looking at the same set of objective marketing facts, one firm may decide to segment progressively, while another firm may decide not to segment at all, depending on their relative enthusiasm for segmentation as general strategy behind their marketing approach. Moreover, marketing action, following the decision to segment, may take different forms.

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AGGREGATION V. SEGMENTATION

Perhaps the best way to understand this concept and its implications is to consider simultaneously the approach and the rationale of each of these opposite strategies. The opposite of market segmentation could be called market aggregation, suggesting the policy of lumping together into one mass market many groups of buyers who might otherwise be marginally differentiated one from another into smaller submarkets.

The strategy of market aggregation is sometimes related to such considerations as cost of production, warehousing, and transporting. The idea here is that long production runs are more economical than short runs, that inventory costs may be minimized if fewer lines are offered, and so forth. Another set of reasons supporting market aggregation focuses upon measurements of the buying efficiency of promotional funds. Within certain dollar ranges, at least, the efficiency of promotional budgets may respond elastically to changes in size. That is, each dollar added to the promotional investment in a single product may result in a proportionately larger increase in promotional efficiency. The explanation of this lies in the basic per-thousand costs of advertising media. Media costs tend to follow this law: The larger and more general the medium, the smaller the cost per thousand; the more limited or specialized the medium, either geographically or by editorial or audience appeal, the greater the cost per thousand. The more that markets may be aggregated, the lower the cost per thousand in buying advertising to reach that mass market, at least within the range of certain promotional budgets.

For the major consumer advertisers, however, promotional budgets frequently pass the range of efficiency discussed above. The size and diversity of the mass-consumer markets require supplemental advertising investment in local and/or specialized audience media. The latter then become an important part of the company's total national advertising program. At this point, one rationale for the strategy of aggregation tends to disappear; indeed, national advertisers move toward segmentation strategy in proportion to their targetting of selective local and/or specialized markets.

The strategy of market segmentation suggests a continuous policy of looking for differences, geographical or otherwise, in the total market, and the continuous exploitation of these differences. Often they are quite marginal, and their exploitation may require imaginative thinking on merchandising and promotion. Thus, some of the finest examples of market segmentation entail really creative actions. These may be the creation of new buyer needs, or at least the crystallization of needs previously felt only vaguely or to a slight degree. The effective crystallization of such needs in the minds of some consumers invokes demand for a new specialized product where previously there was reasonable satisfaction with a more generalized product.

Segmentation may also be practiced in many facets of marketing other than the product mix—for example, the penetration of new markets for existing products through sales force specialization, or the greater diversification of distribution channels.

As a consistently practiced strategy, segmentation seems to be oriented toward high sales volume, more so than the opposite policy of aggregation. It is ordinarily demonstrable that total sales may be increased with a more diversified product line sold through more diversified channels. The operative consideration is, traditionally, whether the line can thus be expanded profitably. This in turn may lead to the weighing of average unit profits versus marginal unit profits. These are always changing relationships, but important secular trends seem to be altering the equation in favor of market segmentation as more generally advantageous strategy.

Some of these trends relate to simple demographic factors, which tend to make markets larger and more segmentable. Such factors include increased population, income, leisure time, home ownership, educational level, and so forth. A perhaps less obvious factor in increasing the acceptance of market segmentation as a corporate strategy has been the advance of technique in market research, which always seems to be finding better ways to identify consumers and their buying motivations.

Common Examples

All around us we can see the fruits of market segmentation as practiced by major national manufacturers of consumer goods. Taking the

period just before World War II as our reference point, we find everywhere examples of companies that have followed a pattern of progressive segmentation of their markets. Remember when most cigarette smokers were users of only four brands, all standard size, soft-packaged, nonfilter, nonmentholated? Cigarettes are perhaps a noteworthy example, but they are surely not unique. Package foods, cosmetics, soaps, liquor, and automobiles are other obvious examples.

Some consumer product-line manufacturers have practiced segmentation so assiduously over so many years that they are now in danger of losing their corporate identity in the minds of consumers. Even the most confirmed segmenters acknowledge that the "family of products" effect can be beneficial. It is then that they turn to umbrella devices, like the Betty Crocker name and the spoon on the General Mills packages.

Few companies that have chosen the strategy of market segmentation, however, have reached such a point. For most would-be segmenters the immediate problem is how to diversify rather than unify their offerings. They tend to use corporate emphasis only for special purposes—on a temporary basis when introducing a product or at trade rather than at consumer promotional levels.

Management's widespread adoption of segmentation—made obvious by the postwar boom of new brands and sales outlets—must be recognized as a marketing strategy that takes account of more than just simple economic or demographic changes in American life. For example, as consumers and as businessmen, we are subject to a constantly increasing volume of advertising messages. So great is the total number of advertising messages with which we are daily bombarded that this fact alone tends to outmode one implication in the strategy of market aggregation. The marketer who formerly preferred to concentrate his promotion on a tightly limited product line had in the back of his mind that he could, perhaps, overwhelm his buying public with the sheer volume of his repeated advertising messages. This has become an impossibility in recent years.

More and more the successful advertiser has to depend on the uniqueness of his selling message in order to win consumer interest. And product differentiation, however marginal, is one of the more obvious ways of finding a unique selling message. Even the Coca-Cola Company, that steadfast proponent of market aggregation that has been in the mind of man and boy one brand, one product, and one bottle, has in recent years edged slightly toward segmentation with its multisized bottles, and thus has found new selling appeals.

Sociologists and others have commented on the increasing sameness in many aspects of American life. The other side of this coin of sameness is that it forces us as consumers to distinguish ourselves from our development-housing neighbors, increasing our demand for at least minor distinctions in the products that we consume. This, of course, plays right into the hands of the market segmenters.

The postwar onset of television has furnished a most convenient springboard for market segmentation as a strategy to be more widely and systematically applied. In the introduction of new products, a regular condition of life for thoroughgoing market segmenters, a common approach is market-by-market. Spot TV is a powerful, well-adapted medium for promoting new products in selective markets. Another recent development in advertising—the multiplication of state and regional editions of magazines formerly available only as single national buys—may be understood both as an applied form of market segmentation by the magazines and a stimulus toward the strategy of market segmentation on the part of advertisers.

BUSINESS AND AGRIBUSINESS

Leaving the more familiar realm of consumer goods, we encounter dramatic insights into segmentation strategy everywhere in indus-

trial marketing. Recently, a manufacturer of industrial metal buildings, aiming to sell store buildings to large retail chain organizations, shifted its tactics to allow its dealer organization to carry the ball in promoting such national construction contracts. Previously, this manufacturer had tried, not too successfully, to handle these retail chains as house accounts, and to offer them a standardized, prototype building. The dealer organization was finally recognized as the key to unlocking this market, because dealers are better able to tailor their product offering to the buyers' local needs, even when the buyer is a large national chain. In other words, what had been considered as a single aggregated market proved through hard experience to be more correctly defined as a segmentable market.

Another broadly segmentable market is represented by American agribusiness in its role as purchaser of numerous production inputs. Despite some widespread stereotypes about agriculture—as in the expression "the farm problem," which implies that agriculture could be considered as a unit—today's agricultural organization is rich in variations. It actually makes segmentation strategy mandatory for suppliers who would penetrate agricultural markets in any depth. In agriculture, the problem for marketers is not whether to segment this vast buying potential, but how and to what degree. In the last analysis, no two farms are precisely the same in their significant demand characteristics, nor do they have precisely the same enterprises. As in consumer marketing, the firm selling in agricultural markets must aggregate its final customers at least to the extent of dealing with groups rather than individuals. There is no point in analytically subdividing agriculture into purposeless fragments, or even going beyond some of the broader, more obvious subdivisions.

Since the tree of agriculture has too much foliage for us to examine every leaf, we propose to strip back the bark from just one branch, and see how the sap runs.

The two most basic branches in agribusiness are crop production and livestock-poultry production, although the interrelations and overlappings between the two are so complex that their presentation as a dichotomy could mislead. Of these two, the livestock-poultry sector is the more important in terms of total income to farmers. Moreover, secular trends in American consumption patterns toward higher protein diets indicate even greater future importance for this sector. In general, livestock-poultry is a more dynamic and challenging example for the purposes of this article.

LIVESTOCK CHEMICALS

Among the most important of the industrially purchased inputs used for livestock-poultry production are fine chemicals and drugs. Indeed, the annual expenditure of $250 million for these represents about 1 per cent of all farmers' total reinvestment in productive goods and services. A shortened term for this particular reinvestment volume is the market for livestock chemicals.

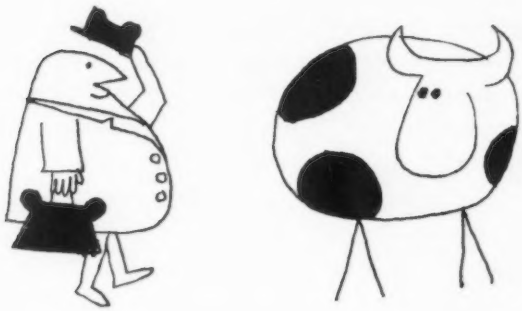
The balance of this article will focus on experience gained by companies that are trying, in various ways, to segment the market for livestock chemicals, and generalized conclusions will be developed from their experiences.

The Structure: Submarkets

One consideration in focusing upon the marketing of livestock chemicals is that it involves definite submarkets that are representative of (1) quasi-professional or ethical product marketing; (2) industrial bulk product marketing; and (3) quasi-consumer packaged product marketing. These natural submarkets are briefly explained below.

The Licensed Veterinarian.—When compared with the professional marketing of drugs for humans, the marketing of livestock drugs through professional veterinarians offers points of both similarity and dissimilarity. The essential difference, of course, is that the veterinarian operates on an economic rather

than a humanitarian rationale. Nevertheless, veterinarians are motivated to some extent at least by a service concept, and they tend to be quite "touchy" about their professional status. In short, veterinarians think of themselves, and foster an image of themselves, in ways to set them apart as a distinct submarket and an obvious target for segmenting strategy by chemical and drug manufacturers.



The Feed Industry.—In selling to major feed manufacturers, the appropriate marketing mix is that required in many industrial marketing situations, such as the selling of bulk chemical intermediates. It happens, however, that concentration in the feed industry is very low, compared with other basic manufacturing industries. More than 50 per cent of total manufactured feed volume is accounted for by some 5,000 small operators. At the lower end of the feed-tonnage spectrum, these 5,000 merge into the manufacturing retailers, who sell over the counter in package form many of the same drugs that they buy in bulk for mixing in their registered and/or custom feeds.

Over-the-Counter Packaged Products.—Some 25,000 assorted drugstores, feedstores and mills, country elevators, hatcheries, cooperatives, farm-to-farm salesmen, and other retailers sell livestock chemicals over the counter in both feed and nonfeed forms. Drug promotion to farmers through these unrestricted channels simulates consumer goods marketing, with manufacturers using all the techniques of mass promotion and advertising. This occurs despite the fact that the products involved are production inputs and should (theoretically) be bought by the farmer not in his capacity as consumer but as purchasing agent for his livestock enterprise.

Before analyzing how manufacturers have implemented their identification of these three segments of the livestock-chemicals market, we should understand that many firms limit themselves agriculturally to a cream-skimming operation, confined to a single submarket. For example, a large variety of firms—some not essentially chemical or drug companies such as distillers, brewers, Eastman Kodak, Borden's, and others—simply sell bulk vitamins or antibiotics to the commercial feed industry. For them, as well as for other firms that confine their involvement to the veterinarian submarket (as do some ethical drug manufacturers) or to the over-the-counter package goods submarket, the opportunities to practice market segmentation are much fewer. Our main interest here is in approaches employed by those firms that aim for substantial operations in all three of the major submarkets of the livestock-chemical industry.

Implementation

Marketing management's problems begin, not end, with the identification of the above three submarkets. Complications arise from the fact that they overlap. Broadly speaking, drug and chemical manufacturers have sought to segment these submarkets through two approaches:

1 Sales force separation, which, carried to its logical conclusion, entails operating in each submarket through quasi-independent, differently named corporate subsidiaries

2 A less formalized approach, with somewhat lower-key emphasis on product-line multiplication under one label and one management.

Firms that have sought to keep their marketing efforts in each of the three submarkets completely separate have commonly used the cover device of different corporate names. Partly, they aim for greater sales and deeper

penetration by fostering specialization; the marketing effort of each subsidiary is tightly compartmentalized to one or, at the most, two of the major submarkets. Their aim is also to prevent one submarket—especially the veterinarian segment—from knowing what happens in another. For example, Vick splinters off the veterinarian submarket for development by its Jensen-Salsbery subsidiary, while its Hess & Clark subsidiary operates over the counter; American Home Products markets ethically as Fort Dodge Laboratories, and over the counter as Wyeth; Lilly appears as Corn States to veterinarians, but sells to the feed industry under the Lilly name, Elanco division. There are numerous other examples.

A special consideration for some human drug companies, which are greatly concerned with maintaining a 100 per cent ethical image in the eyes of druggists, is that they wish to sell farmers packaged animal-health products while avoiding the hurly-burly of shelf competition within the drugstore itself. With retail druggists controlling about 25 per cent of the packaged animal-health business, this image is hard to maintain without benefit of a cover organization. Schering handles this by selling its own labelled animal-health products through licensed veterinarians, while its American Scientific subsidiary sells through unrestricted channels, including drug outlets.

The other general approach to market segmentation—emphasis on product-line diversification under one label—is the favorite of the large companies that have entered agriculture from fine chemicals. The idea here is to offer the same basic product in a wide array of forms, package sizes, "formulas," and convenient combinations. The objective is to cover by product: all species of livestock and poultry; all routes of entry into the animal; types that typically move over the counter (such as growth stimulants); and types that are usually distributed to veterinarians (such as certain biologicals). All are under one corporate name and/or umbrella-brand label. Because the three submarkets tend to blend together in certain areas, this approach permits the same salesman to "sell everybody in town," while the advertising "gets more mileage." Heavy consumer and trade promotion is a concomitant of this species of market segmentation, which relies on the pulling power of advertising to compensate, in some instances, for loss of veterinarian and/or dealer incentive to push merchandise.

In other words, the product-line diversification approach can be developed to modify or even overcome the traditional attitudes held by some veterinarians, druggists, and other retailers who might expect local "exclusives" in animal-health products. Merck, American Cyanamid, and Pfizer have all been notably successful in operating on this basis. Pfizer, for instance, has been most ingenious in multiplying its brand of oxytetracycline into a profusion of forms, package sizes, combinations, and special formulas, some rather marginally differentiated one from another, and then backing all this up with a saturation distribution and promotion program to farmers and to all three of the submarkets.

Evaluation of Techniques

The separate sales force approach, institutionalized into operation through differently named corporated subsidiaries, is firmly rooted in the traditions and predilections of veterinarians and, to a lesser extent, of druggists and feed manufacturers.

For the many manufacturers that so far have made only a token entry into livestock chemicals, this particular segmentation route undoubtedly offers interesting possibilities for achieving wider and deeper market penetration. It does suffer, however, from the ultimate limitation of being oriented toward the *status quo* of the agribusiness. With the organization of American livestock and poultry production rapidly moving toward thoroughgoing specialization, larger unit size, and more integration—both horizontal and vertical—these changes are being reflected in the relative importance of various channels in distribution of livestock chemicals.

In Western commercial cattle feedlots, for instance, veterinarians are tending toward more specialized diagnostic-advisory functions with less dispensing, and with control (particularly application) of health products passing heavily into the hands of laymen. Even in the Midwest, hypodermic syringes, ownership of which was once the hallmark of the professional veterinarian, are now in the hands of one-third of all livestock farmers. More than 50 per cent of all large animal injectable products are estimated now to be applied by farmers themselves.

Developments such as these, plus the already mentioned dispersal of the feed industry, create difficulties for the segmentation approach based on separate subsidiaries operating in rigidly defined submarkets. Within the parent corporation, need may frequently arise to arbitrate jurisdictional problems caused by these shifting areas between submarkets.

In contrast, the segmentation approach, which is based mostly on product diversification, allows more flexibility in the matching of products to channels. The trade classifies itself, so to speak, with minimum intraorganization friction and with no bases left untouched. It is easy, then, to handle the many overlapping trade classifications, such as the integrated broiler organization, or the veterinarian in the wholesale feed supply business. No matter what buyer wants a particular drug in whatever form, quantity, or package size, any of the manufacturer's territorial salesmen can service the account. The extreme diversity of production patterns in different species of livestock and poultry, and in the various regions, is reflected by how producers buy livestock chemicals. It puts a premium on flexibility of the marketing organization in firms that would sell livestock chemicals in great volume.

Thus, the most generally successful approach to segmenting the market for livestock chemicals appears to involve (1) a single marketing management; (2) multiplication of product offering to suit the needs of every major type and size of buyer; and (3) full-line offering in the field. This is recognized as a somewhat less aggressive response to the segmentation possibilities inherent in the three major submarkets than its alternative—split operations through quasi-independent corporate subsidiaries.

The latter approach seems, eventually, to become a type of overresponse to the inherent segmenting possibilities. This conclusion suggests that there is an implied time dimension in identification of market segments. In the short run, before deep market penetration can be programmed, market segments can be identified by their close correspondence to prototype. In the long run, after enough time has elapsed to sell a market segment in real depth, this deeper penetration takes the marketer past the clear-cut, close-to-prototype customers, and into the areas populated by cross-over customers who are only partly in that segment. It is not a matter of the market segment becoming illusory; these are real concepts. Rather, it is a case where the validity limits of the segment identification have been finally reached.

In contrast, the more flexible approach toward segmenting the livestock chemical submarkets—exemplified by Cyanamid, Merck, and Pfizer—represents a more mature form of segmentation strategy, in this industry at least. A view of the organizational history of these firms tends to verify this thesis. At one point or another in the past, all three of these firms have had marketing organizations that incorporated some of the philosophy of the completely separate-sales-force-*cum*-different-label approach. For example, the licensed veterinarian submarket was, in the past, singled out by Cyanamid to sell under the Lederle label, by Merck under the Merck-Sharp & Dohme label, and by Pfizer under a special brown label. In time, however, with deeper market penetration accompanied by a stream of new products, these special submarket labels were sloughed off as the present segmentation strategy crystallized and emphasis shifted to offering many products

tailored to submarkets under one corporate label and one marketing management.

MARKET SEGMENTATION is the strategy of divide-and-conquer, and its implementation takes many forms. Like Molière's character who had been speaking prose all his life without realizing it, all firms practice market segmentation to some degree, mostly without conscious formalization of it as corporate strategy. In order that market segmenting action by any firm qualify as part of a general strategy, there should be a background of a more or less *continuous* search for identifiable submarkets plus *continuous* exploitation of them.

In their purest form, segmentation actions require imagination and creativity but are compensated for by higher sales volume. The operative criterion, however, in weighing such segmenting action as product-line diversification has traditionally been profitability. Numerous examples from everyday life suggest that secular trends are altering certain equations in favor of more extensive segmentation as the profit-maximizing strategy for more and more firms. A few of the postwar demographic, sociological, and business factors contributing to this development were mentioned.

The livestock-chemical industry was analyzed for applications of segmentation strategy. Three major submarkets were described. Companies broadly involved in livestock chemicals were found to practice two kinds of market segmentation: one based on sales force diversification, which in its purest form is operation under differently named quasi-independent subsidiaries in each submarket; the other emphasizing product-line diversification under one label and one marketing management. While the first approach is widely used, and undoubtedly is a promising avenue of expansion for firms now only modestly involved in livestock chemicals, it was concluded that long-run sales maximization in the interrelated and shifting livestock-chemical markets requires the greater flexibility of the second approach. The area of cross-over products and mixed channels of distribution emphasize the need for flexibility, in order to be sure that all bases are covered—by product as well as by field sales effort.

It was concluded that the other market segmentation approach in livestock chemicals, based on split operations through separate corporate subsidiaries, becomes in the long run a form of overresponse to the segmenting possibilities inherent in identification of the three submarkets. This conclusion led to the suggestion that there may be a time dimension implied in the identification of any market segment. In the short run, a firm can identify a market segment by the close correspondence of customers to a prototype. In the long run, after that market segment has been sold in depth, the marketer works himself into areas populated by cross-over customers who are only partly true to prototype. Thus, the validity limits of the segment are finally reached. And it is at that point that a too rigid marketing organization, one that attempts to institutionalize segmental distinctions, becomes an instrument of less than optimum efficiency.

W. David Maxwell

Not Free But a Small Fee

It has often been recommended, as a solution to urban traffic congestion, that public transportation be made more desirable by providing the service free of charge. The people who, it is hoped, would be attracted by this reduction are those now driving automobiles into, from, and within the congested urban areas.[1] The purpose of this article is to suggest that this proposal is not apt to prove the panacea it has been claimed to be, though a less drastic remedy may be beneficial for reasons not usually recognized.

The crucial question is how the automobile driver would react to the introduction of free mass transit services. The implicit assumption in the argument favoring free transit is that such a measure would cause most drivers to prefer the public transport to their automobiles. This is an assumption that deserves close scrutiny.

The automobile driver, at present transit fares, prefers the service provided by his automobile—for reasons that are readily understood. The bus passenger must compromise his individual preferences in accordance with the service provided. The bus does not leave from exactly the place or at exactly the time that the individual passenger would have it leave; it does not follow the precise route that he would choose; it does not make only the stops between his starting point and destination that are necessitated by traffic control devices; and it does not stop exactly at the place he would wish it to. (The express or through bus is an attempt to reduce the extent of compromise necessary, but some compromise is inevitable as long as there is less than one bus to each customer.) The service offered by the bus is simply less convenient than that provided by the automobile. The bus lacks the

[1]See, for example, L. Leslie Waters, "Free Transit: A Way Out of Traffic Jams," *Business Horizons*, II (Spring, 1959), 104-9.

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speed, storage space, privacy, and flexibility of the auto.[2] In turn, however, the automobile has its own disadvantages, perhaps chief among them being its cost and the fact that too many others realize its advantages. Nonetheless, automobile owners have weighed the two alternatives and made their decision on the basis of the costs currently involved in the use of each of these modes of transport.

In considering the reaction of automobile drivers to the provision of free public transport, one must be careful not to beg the question by pointing to improvements in transit service that would occur only if the great majority of drivers became riders and the streets were left practically devoid of automobiles. Each conversion of driver to rider would lessen the congestion, parking difficulties, and travel time, and would in other ways make driving more attractive for those who continued to use their cars. There might then be considerable defection in the opposite direction. The net result would undoubtedly be some reduction of drivers, but probably not an unduly large one.[3] The implicit assumption of an extremely high cross-elasticity of demand by the driver for the services of his automobile relative to the price of the services of public transport is unsupported. On the other hand, both the fact that the driver in many instances is willing to pay a considerable premium for the use of his car and the fact that this preference has survived considerable relatively adverse cost changes have both been demonstrated.

In much of my own city of New Orleans, one is never out of sight of a streetcar or bus (many of which are air conditioned) and the fare is 10 cents (recently raised from 7 cents). In short, the service is excellent and the price only nominal. Yet on either side of beautiful St. Charles Avenue, in the middle of which the streetcars ply busily back and forth, there is no dearth of automobiles whose drivers are no doubt quite aware that they could travel much more cheaply on the trolley. And the same is true of the buses. It is not likely that eliminating the 10-cent charge on the public transport would lead to a wholesale desertion of the auto. Of course, one could argue that the congestion might be considerably worse if the transit service were not so inexpensive and of such good quality.[4] The contention here is not that the cross-elasticity of demand by drivers for transit services is zero; it is simply that since drivers obviously do not regard transit services and the services provided by their own automobiles as virtually identical, one should not assume the cross-elasticity to be extremely high.

In combating the problem of traffic congestion, every effort that promises a contribution greater than its cost should be attempted. Among these efforts, measures to increase the attractiveness of the services provided by public transport certainly have their place. But we should not fallaciously conclude that the cross-elasticity of demand for transit services is so great that it will attract all the patrons of

[2]It is difficult to assess the efficiency of the various modes of transportation when the starting points and destinations of travelers are widely dispersed. Under such circumstances, the automobile may often be the least costly mode (especially if the opportunity cost of the difference in travel time is included).

[3]A number of factors would tend to curtail the shift from drivers to riders that would result from the lowering of bus fares. While the decline in the number of cars would tend to reduce travel time of the bus along its route and, by improving the load factors, make it economical to increase the number of buses, the saving in travel time to the motorist would be proportionately greater. Furthermore, the improved load factor of the bus would increase the number of passengers; to many motorists the crowding of their car may well be less objectionable than the crowding of their person.

Additional benefits, largely confined to motorists, would tend to occur and act as a further check on the shift from cars to public transport. Parking might become cheaper and more available; auto insurance, fuel, repairs, and accessories might also become less expensive; finally, the motorist's travel time on streets and over routes on which there was no bus service would tend to lessen.

[4]However, despite the relative attractiveness of its transit system, traffic congestion in New Orleans is greater than the average in the nation's twenty-five largest cities. See Francis Bello, "The City and the Car," *Fortune*, LVII (October, 1957), 158-59.

automobiles if we but increase the cost differential. This assumes that all of the customers in the related market are at the margin.

Whatever the current costs of the various services, travelers to, within, and from urban areas are distributed between two markets, the services of which are by no means interchangeable. Increasing the differential will simply reapportion the consumers between the markets (and also have some effect upon the total number of customers). There is no reason to assume that the relevant elasticities are those needed to cause most of the consumers in the high-cost market to respond to an increase in the differential by deserting that market. The very existence of a substantial cost differential reflects dissimilarities in the services that argue strongly against the extremely high cross-elasticities upon which the argument in favor of free transit depends.

Some attention should also be directed to the effect that free public transport will have on the nondriver's demand for these services. Whereas the cross-elasticity of demand by motorists is not apt to be high enough to divert the great bulk of them to this market, the elasticity of demand for *free* transit services by nonmotorists may well be so great as to render the proposal unfeasible.



Many nondrivers are outside the labor force (which constitutes roughly a third of the total population) or, if within the labor force, poorly remunerated in the typical medium-sized city. To the children, to the very low-income group, and to the housewives of low-income families, a fare of even 10 cents may significantly check the demand for these services (though there is some evidence to suggest that at this fare air-conditioned buses render baby-sitting much less arduous on a hot summer afternoon). If there were no charge, the bus or trolley would become a wonderful plaything (the enjoyment of the child perhaps increasing directly with the number of starts and stops), and the quantity of the service demanded for other than economic reasons might greatly increase. The increase in the demand for transit services, if these were free, on the part of persons prevented by age, income, or other factors from becoming drivers might well make the service even less attractive to those who now drive and might greatly increase the cost of providing the service.[5] Hence, it is not at all unlikely that the combination of insufficiently high cross-elasticity of demand by drivers for the services of public transport and a very high elasticity of demand by nondrivers for those same services *when free of charge* might well aggravate rather than alleviate the problem of urban congestion and increase the total cost of transportation in the typical city.

It is odd that only one set of value judgments is usually brought to bear upon the urban transformation now taking place in our society. The growth of the suburbs and the decline of the downtown area is almost universally viewed as an undesirable change in which the

[5]In urban transport, only up to a point does the average (not total) cost fall with an increase in patronage. In the absence of any rationing of the service by price, the quantity demanded might well increase so much as to require additional facilities (the investment in these is generally "lumpy"), the cost of which could exceed that of other more effective methods of alleviating the problem.

automobile has played the role of villain. If, however, this development is looked at in a different light, the auto can be viewed as the hero. It has enabled our urban population to spread over a greater area, thus lowering the congestion of living quarters and giving us a little breathing space, at least in our nonworking and nonshopping hours. It is also rapidly alleviating two of our major remaining areas of congestion—the places where we work and the places where we shop. Concerns with interests vested in the present distribution of living, working, and shopping places are striving mightily to slow the rate of change by, in essence, taking measures to reduce urban congestion. They are also, however, putting forth essentially the same argument that we have heard so often in the past—that of excess capacity, wasteful duplication of facilities, and so forth—as a flanking action to safeguard these interests. Society had the good sense to discount this argument when it was put forward by stagecoach and canal owners, even when it was disguised as a matter of esthetics. It may do so again.

Good, bad, or indifferent, the urban transformation will continue. Traffic congestion, the by-product of our attempts to avoid living and shopping congestion, is, moreover, the major limitation upon the primary instrument of the urban transformation—the automobile. Thus, direct attempts to relieve traffic congestion, such as street widening and the building of expressways, will accelerate the rate of the urban transformation in that wider streets and expressways that can accommodate more automobiles will very quickly do so. In other words, these measures will then defeat their purpose; the rate of urban transformation will be increased and traffic congestion will quickly rise to at least its former troublesome magnitude.

We have rejected *free* transit as unlikely to persuade many drivers to abandon their automobiles and likely to encourage the profligate use of public transport by nondrivers. In the longer-run context of the urban transformation, it is apparent, however, that a more judiciously selected subsidy of the transit system (one that would *not* make its services free of charge) may have certain beneficial effects not usually recognized by the proponents of such subsidies.

In order to identify these effects, we should focus our attention not upon motorists who may become nonmotorists or suburbanites who may become urbanites but upon exactly the opposite movements. Every new expressway makes the city dweller less content with his lot and encourages him to buy an automobile (if he does not already have one) and move to the suburbs. Wise subsidization of the transit system, however, can make living in the city more attractive and the relative cost of joining the urban transformation greater to those not yet committed to it.

Thus, the real merit in proposals to subsidize public transport is not that they can provide the same services as the automobile but that the subsidy will increase the relative cost to the potential participant in the urban transformation and thus tend to slacken its pace. In this way, the rate of increase in the number of cars in the central urban areas may be checked. We might also regard such subsidies as evidence of our sympathy for that segment of the urban population for whom participation in the urban transformation is not at present a possible or effective alternative.

D. D. Ray

Are Accountants Misstating Profits?

THE MEASUREMENT of business income has emerged as the principal function of accounting. This point has been emphasized for many years now by well-known writers both in accounting and in other fields. As Thorstein Veblen said in 1904, ". . . the all-dominating issue in business is the question of gain and loss. Gain and loss is a question of accounting."[1]

In the light of this widely recognized role of accounting in measuring business income, it is disquieting to find so many writers who imply, and often explicitly state, that traditional accounting methodology "misstates" or "distorts" business profits.[2] Such a charge—whether it concerns overstatement or understatement of profits—must be made relative to some standard, and the standard commonly referred to by critics of accounting methodology is "economic" or "real" profit. Before proceeding with an examination of how accountants are said to misstate profits, it is pertinent to inquire into the nature of both accounting profits and economic or real profits.

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ACCOUNTING PROFITS

Basic Postulates

Revenue arises at the moment when realization is deemed to take place. One of the most widely enunciated accounting postulates underlying business income determination is that revenue is recognized in the accounts only when it is realized, that is, when it is evidenced and supported by a genuine asset, preferably in liquid form. It has been stated that business revenue should have the following desirable characteristics:[3] (1) it should be

[1] Thorstein Veblen, *The Theory of Business Enterprise* (New York: Charles Scribner's Sons, 1904), pp. 84 ff.

[2] See for example: John B. Canning, "A Certain Erratic Tendency in Accountants' Income Procedure," *Econometrica*, I (1933), 52-62; Walter Adams, "Accounting Practices and the Business Cycle," *The Journal of Business*, XXII (April, 1949), 119-33; and W. T. Baxter, "The Accountant's Contribution to the Trade Cycle," *Economica* (May, 1955), pp. 99-112. Many other illustrations of this position can be found in the author's *Accounting and Business Fluctuations*, published by the University of Florida Press, copyright 1960 by the Board of Commissioners of State Institutions of Florida, from which parts of the present article are derived.

[3] E. A. Heilman, "Realized Income," *The Accounting Review*, IV (June, 1929), 81.

considered definitely ascertainable; (2) the certainty of receipt should be high; (3) a cause of action against outsiders should be present; and (4) it should be possible to include the amount in liquid funds that will be available shortly for expenditures or distribution.

Of the many possible bases that have been suggested for recognizing revenue, the sale comes nearest to meeting the above criteria. The sale is considered the end product of operating activity from the standpoint of a business firm, and, as a rule, transfer of product to the customer is coupled with passage of legal title. The sale is not restricted to physical merchandise; rather, a broader view of business activity is adopted. According to an American Accounting Association definition, "Revenue is a generic term for (a) the amount of assets received or liabilities liquidated in the sale of the products or services of the enterprise, (b) the gain from the sales or exchanges of assets other than stock in trade, and (c) the gain from advantageous settlements of liabilities."[4]

The sale as the final step in recognition of revenue has been criticized as being, on the one hand, too conservative and, on the other, not conservative enough. The sale is said to be too conservative since revenue is earned through the productive process rather than the exchange process. The accountant, however, stresses realization as the criterion of earned revenue. Exception is made when the sale brings with it definite assurance of collections, as in the case of cost-plus contracts and construction projects, or when the product has a ready market and accretion has taken place, so that recognition of all the revenue at any one time would cause distortion. Those who think that the sale is not conservative enough have in mind the "after costs" of the sale: the returns, collections, expenses, and bad debts. The accountant may allow for these through the deduction of estimates based on past experience.

Fluctuations in the value of the monetary unit, which is the accounting symbol, may be ignored. This postulate is among the oldest in accounting theory. It has become axiomatic that financial accounting is based on the "cost principle." The cost of any factor of production as established in the market place represents, at the date of acquisition, the economic significance of the factor. To be acceptable to the accountant, costs must be objective and verifiable. Accountants frown on imputed costs. Consequently, hypothetical interest on invested capital and imputed costs covering the services of owners are not usually recognized.

Once a cost has been incurred, it remains unaltered except as it expires in the earning of revenue or until it is no longer considered useful to the business. Cost is, therefore, not synonymous with value except to the extent that cost and value are presumed to coincide at the date of acquisition of the asset.

Accountants have recognized that in periods of major price movements the assumption of a stable measuring unit is invalid for certain purposes. In general, they have taken the position, however, that significant changes in the price level, when needed to interpret the financial statements correctly, should be disclosed parenthetically, by footnote, or in a supplementary schedule. Even though original cost may lose much of its economic significance in periods of rapid price changes, it is still objective and verifiable.

The business entity is considered a going concern. This postulate must not be disregarded in any discussion of profit. It is the only sound foundation upon which a system of periodic income measurement can be built, and is, on the whole, justified by experience, especially among the larger businesses. This postulate helps to explain the reluctance of accountants to recognize changes in values of the concern's assets as a result of changing

[4] American Accounting Association, Executive Committee, "Accounting Concepts and Standards Underlying Corporate Financial Statements," *The Accounting Review*, XXIII (October, 1948), 341.

price levels. Since the assets were bought for use in the business and not for sale, accountants generally take the position that the effect on profit of changes in the value of the assets should be recognized gradually in the profit-and-loss statement via the depreciation charges as the assets are used in operations.

When the business entity is considered a going concern, the fiscal period is one of the most important conventions of accounting. This convention has, of course, its limitations especially in a dynamic economy characterized by business fluctuations. The income for a period is regarded as a test reading since no one can know the income of a business, with any exactness, except after the firm has closed its doors in liquidation. The American Institute of Accountants has formally recognized that the annual income statement is "a tentative instalment in the long-time financial results" of an enterprise.[5]

The difference between revenue and the costs deemed to have expired during the accounting period is profit. If revenues are considered as positive and assigned costs as negative, accounting profit is the algebraic sum of the two. Hence, the accountant's principal task in measuring profit is generally considered to be the determination of the amount of periodic revenue to be recognized, the amount of original cost that should be written off to reflect consumed, expired, or lost usefulness, and the amount that should be carried forward to be written off over future periods.

"ECONOMIC" PROFITS

Traditionally, accountants have taken very little interest in the origin of profits. They have been interested primarily in measuring the amount of profits, in dollars, for given periods of time. They have taken for granted that profits, as they define them, are often present and along with the businessman have viewed profits as a measure of accomplishment. Historically, economists, on the other hand, have not been interested in the problem of the measurement of profits. They have been more interested in explaining why profits exist and why they are tolerated. They have considered profit a social phenomenon associated with the distribution of the proceeds of society's productive activities among the factors responsible for that production. In recent years, however, there is evidence that many economists are abandoning this viewpoint. In measuring the national income and in acting in an advisory capacity to business firms, they have had to tackle the problem of profit measurement and have come to realize that a concept of profit, to have significance, must be measurable. Likewise, accountants are coming to realize that they cannot measure intelligently what they do not understand conceptually. Hence, the traditional differentiation in viewpoint of the two disciplines on this question of profits is tending to break down.

Difficulty of Definition

Although there are frequent allusions to accountants' misstatement of economic or real profits, an exact definition of this concept is not easy to find. Hicks, whose definition of income has been widely adopted, links profit to income. He has defined a man's income as "the maximum value which he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning."[6] Later, he uses "profit" and "income" interchangeably when discussing a business firm. Some writers have, however, tended to make a distinction between these two terms. Frank A. Fetter has stated this difference as follows:

[5] American Institute of Accountants, Committee on Accounting Procedure, "Combined Statement of Income and Surplus," *Accounting Research Bulletin No. 8* (February, 1941), p. 64.

[6] J. R. Hicks, *Value and Capital* (2d ed.; Oxford: At the Clarendon Press, 1946), pp. 172, 196.

> "In economic usage the term income is still, in greater part, applied broadly to things accruing to individuals and available for consumption; whereas profits are peculiarly the impersonal yield of any business no matter what the type of ownership. In conformity with earlier and long established usage it would not be permissible to speak of the 'income' of a corporation."[7]

Although Hicks has given us a widely quoted definition of business income, or profit, he does not think much of it as a tool of analysis. In speaking of income, saving, depreciation, and investment, he has said: "At bottom, they are not logical categories at all; they are rough approximations, used by the business man to steer himself through the bewildering changes of situations which confront him."[8]

Maintaining Capital Intact

Inherent in Hicks' definition of profit is the idea that capital must be kept intact. The problem of measuring income is thus inseparable from measuring changes in the value of capital. Pigou highlights the need to keep capital intact by stating that in a *stationary state*, "net income consists of the whole of the annual output minus what is needed to maintain the stock of capital intact."[9] According to him, "maintaining capital intact" means that the physical stock of capital is to be kept intact. Maintaining capital intact in a *dynamic economy*, however, is not so simple. As Solomon Fabricant has pointed out, "It is extremely difficult to compose an unambiguous definition of capital consumption—of what is meant by keeping capital intact—for an economy characterized by cyclical movements and secular trends in its every element."[10]

[7] Frank A. Fetter, "Reformulation of the Concepts of Capital and Income in Economics and Accounting," *The Accounting Review*, XII (March, 1937), 10.

[8] *Value and Capital*, p. 171.

[9] A. C. Pigou, "Net Income and Capital Depletion," *The Economic Journal* (June, 1935), p. 235.

[10] Solomon Fabricant, "On the Treatment of Corporate Savings in the Measurement of National Income," *Studies in Income and Wealth*, I (New York: National Bureau of Economic Research, 1937), 141.

Henry W. Sweeney discusses four different concepts of maintaining capital intact: (1) the maintenance of relative capital; (2) the maintenance of absolute material capital; (3) the maintenance of absolute nominal capital; and (4) the maintenance of real capital based on price indexes.[11]

According to Sweeney, the object of the maintenance of relative capital is to preserve for the business entity the same proportion of the total social capital that was possessed at the time the capital was originally invested. Very few accountants or economists would accept this view. Men do not usually enter business to compete with one another for the relative share of whatever general economic goods the community may have. According to the second view, maintenance of capital means preservation of the same amount of material physical objects. A person or a business is assumed to have kept capital intact if, for example, at the end of a given time period the same kind of machine is possessed and is in as good condition as the machine in which the original investment was made. The third viewpoint, the maintenance of absolute nominal capital, is that postulated by traditional accounting theory. The fourth concept, the maintenance of real capital based on price indexes, Sweeney subdivides into two categories: (1) maintenance of individual real capital—the original absolute command exercised by the capital over the goods and services of most importance to the particular concern; and (2) maintenance of general real capital or the preservation of general purchasing power.

Thus it can be seen that, although maintaining capital intact may be conceptually simple in a stationary economy, it is exceedingly complex in a dynamic one. While net income in a dynamic economy is still the balance of the gross income over what is needed to keep capital intact, the keeping of capital intact is no longer a clear-cut concept with the result that

[11] Henry W. Sweeney, "Maintenance of Capital," *The Accounting Review*, V (December, 1930), 277-87.

the concept of net income also ceases to be clear cut.

Thus the conclusion must inevitably be reached that in an economy characterized by innovations and by fluctuations in prices and in the level of business activity, the term "economic" or "real" profits does not have a clear-cut conceptual boundary, nor has any economist been able to devise a satisfactory measurement of profit under these conditions. In other words, the standard against which accounting profits are said to be measured is itself a will-o'-the-wisp. When one speaks of economic profit in a dynamic economy, the term is meaningless unless defined explicitly or by context. Since, however, the statement that accountants misstate profits has been reiterated so frequently, the next task will be to inquire more specifically into what is meant by misstatement.

MISSTATEMENT OF PROFITS

The numerous writers who declare that accounting profits are misstated must disagree with some or all of the basic accounting postulates enumerated above. Which do these critics reject?

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Critical Opinion on Basic Postulates

Let us consider the first postulate, that the sale is the basis for recognizing revenue. Fritz Schmidt, one of the earlier severe critics of traditional accounting methodology, says:

> "A further question arises as to how an increase over the initial assets can be produced. It can result only from the activity of the enterprise, and that activity is called *Umsatz* (sale or exchange). Only through a sale or exchange transaction can the assets of an enterprise be increased."[12]

If we may consider this a typical statement, critics of accounting methods of profit determination would seem to have no particular quarrel with the sale as the test of gross revenue. It is true that economists hold out for a production theory of revenue for the economy as a whole, but at the firm level this seems to represent a minority viewpoint.

Neither does it seem that those critical of accounting methods object to the going-concern concept interpreted narrowly. Joel Dean has said: "For corporations, life is eternal, and net income can be measured as the maximum amount that can be distributed in dividends (theoretically from now into the indefinite future) without impairing the company's earning power."[13] Similarly, when the value of a business is assumed to be the present value of a perpetuity determined by dividing its annual income by an interest rate, the going-concern concept is, in effect, being adopted. When, however, the accountant uses the going-concern concept as the basis for refusal to recognize change in value, the viewpoints of the accountant and his critics diverge.

Many critics of accounting methods will even go along with accountants' acceptance of cost at the time of acquisition of an asset as a satisfactory measure of value. One such critic is George Terborgh, who has said, "In the overwhelming majority of cases, of course, cost is a practically satisfactory measure of the value of assets at the time of acquisition, and this fact, added to its obvious availability and convenience, has made it almost universally the depreciation base for purchased assets."[14] It does not follow, however, that those who object to accounting methods of profit determination accept original costs as relevant beyond the time of acquisition. Schmidt says in the article already referred to:

> ". . . replacement costs as of the day of sale must be the fundamental values for profit and loss calculation. Only this can show the

[12] Fritz Schmidt, "The Importance of Replacement Value," *The Accounting Review*, V (September, 1930), 235.

[13] Joel Dean, *Managerial Economics* (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1951), p. 14.

[14] George Terborgh, *Realistic Depreciation Policy* (Chicago: Machinery and Allied Products Institute, 1954), p. 24.

> manager of the business whether or not his production or trading is profitable at a given time, whether or not a business enlargement is necessary, due to good profits, or whether, in consequence of a decrease in the selling margin, a curtailment is necessary." (p. 240)

In other words, in terms of Sweeney's maintenance-of-capital arguments, it would seem that most critics object to accountants' traditional emphasis upon the maintenance of nominal capital in determining net profit.

Many modern writers reject the idea that maintenance of capital means the preservation of the same amount of material physical objects. They insist that it is the investment in the asset that should be kept intact. This concept of the "maintenance of capital" is in harmony with Sweeney's fourth concept and, if accepted, the argument over the measurement of profit largely simmers down to what constitutes the relevant costs to be deducted from revenue in arriving at net profit. In other words, the fact that accountants ignore the fluctuations in the value of the monetary unit in the computation of costs constitutes one of the main objections of those who insist that accountants misstate profits. Many accountants, moreover, share this objection to the computation of cost in profit measurement.

While the critics of accounting methods of profit measurement are in substantial agreement that it is the maintenance of the investment in the asset—the maintenance of purchasing power—that is to be kept intact, they are not in accord as to how the maintenance of purchasing power should be determined. The argument still continues as to whether this purchasing power should be measured in terms of specific assets or in terms of generalized purchasing power. The latter viewpoint was adopted by the Committee on Concepts and Standards Underlying Corporate Financial Statements of the American Accounting Association:

> "The effects of price fluctuations upon financial reports should be measured in terms of the over-all purchasing power of the dollar —that is, changes in the general price level as measured by a GENERAL price index. For this purpose, adjustments should not be based on either the current value or the replacement costs of specific types of capital consumed."[15]

Concepts of Income and Profit

Under the above concept of the maintenance of capital, if prices did not change, and if the cost of an asset should generally be equal to the present value of an associated future stream of receipts, the differences between economists' and accountants' concepts of income and capital would be considerably reduced. Even under these conditions, however, a few differences would remain. Whereas the majority of American economists hold to a concept of "pure profit," accountants are reluctant to recognize certain implicit costs. If the business is a sole proprietorship or a partnership, the residual income as computed by the accountant will contain elements of both wages and interest. If the firm is a corporation, accountants' profit figures still include interest on the stockholders' investment. Even in the case of the corporation, however, the wage deduction is not clear cut since management may receive more or less than the competitive rate of return. In the sense of pure profits, therefore, we could always say that accounting profits were misstated and, more specifically, overstated.

Effects of Fluctuating Price Levels

In a dynamic economy characterized by business fluctuations, economists are usually unwilling to accept accountants' customary measurement of business profit. Sales are recorded at current prices while the costs

[15] The American Accounting Association, Committee on Concepts and Standards Underlying Corporate Financial Statements, "Price Level Changes and Financial Statements," *The Accounting Review*, XXVI (October, 1951), 471. For the viewpoint that the purchasing power that is to be kept intact applies to specific assets, see William Blackie, "What Is Accounting Accounting For—Now?" *Proceedings of the Twenty-Ninth International Cost Conference* (New York: National Association of Cost Accountants, 1948), p. 37.

matched against these sales are based on historical prices, which, if prices are fluctuating, means a different price level. Business income as customarily computed is thus a hodgepodge and is, to some extent, a reflection of the stage of the business cycle at the time of reporting. An excellent summary of the exaggeration in profits caused by accounting methods in periods of rising price levels was given by an accountant in the hearings before the Joint Committee on the Economic Report in December, 1948:

> "A consequence of this practice [ignoring fluctuations in the value of the domestic currency] is that in periods of significantly rising prices, reported profits, like other incomes, tend to show extraordinary dollar gains. At such times, costs, calculated on the book value of yesterday, fall short of the amounts needed to provide the physical replacement of inventory and plant used up in current production. Conversely, in periods of rapidly falling prices, as in the early 1930's, profits expressed in dollars tend to be understated, and operating losses, not uncommon at such times, tend to be magnified."[16]

In discussions of the misstatement of profits by accounting techniques in periods of fluctuating price levels, most of the criticism has been directed at asset valuation and the effect of expense calculations based on the historical cost of these assets. Much is made of the accountants' overstatement of profits during periods of rising price levels and the understatement of profits during periods of falling price levels.

The impact of changing price levels on the valuation of long-term liabilities and the effect of this valuation upon profit measurement is, however, very seldom mentioned in these discussions. Corporate bonds require the repayment of a fixed number of dollars regardless of the purchasing power of the dollars at the time of repayment. If price levels rise after the obligation is incurred, the settlement of the debt in dollars of decreased purchasing power results in an economic profit during the time the obligation is outstanding that is not recorded in the accounting records of the issuing corporation. If bonds make up a portion of the capital structure during a period of rising prices, the accountant's assumption that a "dollar is a dollar" in the valuation of these liabilities can be said to result in an understatement of profit. This should be set against any overstatement resulting from cost expirations based on assets bought at a lower price level before the amount of the misstatement of profit is determined. If, at the time the bonds are repaid, price levels are lower than the date of issuance—if the purchasing power of money has risen—the result is an unrecorded loss and, hence, reported profits can be said to be overstated as a result of accounting techniques. Thus, if substantial amounts of long-term bonds are outstanding, the net misstatement of profits by accounting methods may not be as large as is sometimes assumed. The predilection for bond financing in recent years, largely a result of corporate income tax regulations, gives added significance to a consideration of this opposing tendency.

Thus it may be contended that accountants have chosen a concept of net profit that can be more easily measured than that of economists but which yields misleading results under conditions of fluctuating price levels. Economists, on the other hand, have attempted to construct a profit concept that would stand up under these fluctuating conditions but which is not so easily applied to a business firm.

AMOUNT OF MISSTATEMENT

A number of attempts have been made to quantify the misstatement of profits resulting from accounting methods. Dean, for example, has compared the book profits of General Electric Company, Westinghouse Electric Corporation, and Radio Corporation of America with their real economic earnings for the

[16] Testimony of George D. Bailey, Partner, Touche, Niven, Bailey and Smart, in U.S. Congress, *Profits*, A Report of a Subcommittee of the Joint Committee on the Economic Report on Profit Hearings, 80th Cong., 2d sess. (Washington: U.S. Gov't Printing Office, 1949), p. 37.

period 1935 to 1948. Each major group of assets was deflated by means of an appropriate price index, and all assets were stated in terms of their 1935 price levels. Profits were determined by changes in the companies' total net assets from year-end to year-end, plus dividends, and minus new capital funds added, which were also stated in 1935 dollars. Total profits per books of the three companies during the fourteen years were $1.3 billion while in constant 1935 dollars they were $580.3 million.[17] In only one year, 1938, did profits in constant dollars exceed the profits per books.

Ralph C. Jones made a similar study of nine steel companies from 1941 to 1947. Jones converted every item on every financial statement into 1935-39 dollars by dividing each item by the index number for the relevant date or period; the results were combined into a composite picture of the industry in terms of purchasing power. Among other things, Jones found that for 1946 the companies' statements showed total profits of $200.0 million before transfers from reserves, compared to a real loss before transfers from reserves of $88.0 million.[18] For 1947, the reported net income available to investors was $356.0 million compared to $91.0 million when converted to 1935- 39 dollars.

Turning from the firm level to corporate business as a whole, Sumner Slichter estimated that total corporate earnings were overstated from 1946 to 1948 by $16.4 billion.[19] "The principal reason" for this overstatement, Slichter said, "probably is that accounting is a conservative and conventional art, and accountants are slow to adapt their methods to new conditions and new problems. Accountants are not used to taking account of permanent changes in the price level."[20]

[17] Joel Dean, "Measurement of Profits for Executive Decisions," *The Accounting Review*, XXVI (April, 1951), p. 195.

[18] Ralph C. Jones, "Effect of Inflation on Capital and Profits: The Record of Nine Steel Companies," *The Journal of Accountancy*, LXXXVII (January, 1949), 13.

[19] *Profits*, Table XVI, p. 175.

[20] U.S. Congress, *Corporate Profits*, Hearings Before the Joint Committee on the Economic Report, 80th Cong. 2d sess. (Washington: U.S. Gov't Printing Office, 1949), p. 8.

IT HAS been demonstrated that there is no single criterion of economic profit against which accounting profits are said to be misstated, since, in a dynamic economy, economists themselves are neither agreed on profits conceptually nor on their measurement. In a stationary economy, on the other hand, accountants and economists, in general, have a common meeting ground in Hicks' idealized concept of income, and the two disciplines thus come closer to an agreement on the concept of profit and its measurement.

However, since the statement that accountants misstate economic profit has been so often reiterated, even in the real world characterized by business fluctuations, the exact meaning of this statement was explored more thoroughly. Of the basic accounting postulates underlying the measurement of profits, it was found that the ignoring of the fluctuations in the value of the dollar—that is, the reliance of accounting methods on the maintenance of dollar, or nominal, capital intact rather than real capital—was the postulate most often attacked by those who claim that accountants misstate economic profit. In other words, critics of the methods of computing accounting profit insist that the costs to be deducted from revenue before net profit is determined should be current costs instead of historical costs. In practical application, the adherents of the current cost doctrine tend to rely upon index numbers to convert the historical cost of the accountant to current costs. There is still disagreement among the advocates of current cost, however, as to whether the index number to be used should be one based on the general price level, or one based on the price level of the specific asset to be replaced.

In conclusion, it should be stated that the intent of this article is neither to defend nor to condemn traditional accounting methods of measuring business profits. The rather frequent and glib assertions that accounting methodology misstates economic profit are, however, disturbing. Economic profit is an ambiguous concept that must be carefully defined by each writer using the expression.

L. T. Wallace and Vernon W. Ruttan

BRINGING INDUSTRY TO THE DEPRESSED AREA

Tremendous effort toward industrialization as the key to area development has been put forth in recent years. In 1958, it was conservatively estimated that at least 14,000 different organizations—ranging from Chambers of Commerce with extensive operations in large metropolitan centers to one- or two-man groups in small rural towns—were involved in industrial location throughout the nation.

In addition, national policy has encouraged economic growth in depressed areas. Senator Douglas' Area Redevelopment Act, passed May 1, 1961, provides for an administrator with authority (1) to make loans to finance the purchase of industrial sites and the construction or modernization of plants; (2) to make loans and grants for the improvement of public facilities; (3) to supply technical assistance in local development planning; (4) to make grants and other assistance that would further urban planning and renewal; and (5) to provide for the expansion of vocational training and for the retraining of the labor force, including the payment of subsistence grants to trainees.

The object of all this effort has been correction of the continuing blight of underemployment and unemployment, a blight that persists in "pockets" despite unprecedented growth of the U.S. economy during the last twenty years. The principal reasons for this persistent problem include shifts in the regional distribution of industrial location, a strengthening of international competition, shifts in demand for goods and services, and rapid technological change.

In September, 1960, the Bureau of Employment Security classified 42 major and 116 smaller labor market areas as having "substantial labor surpluses," that is, no employment for 6 per cent or more of the local labor force. Sixteen major metropolitan labor markets have been classified as chronically depressed since 1951; and 74 of the smaller areas were classified as having "substantial and persistent" unemployment in 1960. These labor markets account for between 500,000 and 1,000,000 unemployed workers.

Many rural as well as urban labor market areas are afflicted with persistent employment

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problems.[1] In rural areas, the problem is usually measured in terms of underemployment rather than unemployment—that is, in terms of employment at income or productivity levels below the levels achieved by comparable workers elsewhere in the economy. Thus, in 1959, 35 per cent of the nation's farm families had incomes under $2,000.

Despite the number of action groups and the scope of permissive legislation dealing with industrialization as a solution to area employment problems, we still do not know much about the relative importance of the economic, social, political, and institutional factors affecting plant location. The masses of material flowing from federal agencies concerned with urban and rural development, from state and local commissions on industrial development, and from some consulting agencies generally do not answer fully such questions as:

What are the factors most influential in attracting industry?

How does industry make plant location decisions and who makes the final site selection?

What information is gathered for the location decision-makers?

What use is made of private and public organizations in this decision process?

And what role might the community itself play as an independent location factor?

A recent study of the factors affecting industrial location has been conducted in southern Indiana to assist in answering questions like these. This is a particularly suitable area in which to conduct such an analysis. The southern portions of Indiana, Illinois, and Ohio comprise the northern fringe of a region characterized by low agricultural incomes, substantial underemployment in agriculture, and limited nonfarm employment opportunities. In this area, urban-industrial development has not expanded fast enough to absorb new entrants to the labor force as well as the agricultural workers released by advancing technology. More rapid urban-industrial development would help solve the surplus labor problem in both the rural and urban sections of this region.

This study was conducted to gain information about the factors affecting industrial location in southern Indiana, including the specific role played by the community in recent plant location. Communities and other interested parties might use this information to consciously speed local rates of industrial development. Analysis of this type is particularly pertinent to the local economic development committees organized under the USDA Rural Areas Development Program. It should also be useful to participants in programs set up under the Area Redevelopment legislation recently passed by the 81st Congress.

The results of the study, taken from the southernmost thirty-three counties in the state, may be generalized to cover other areas in the U.S. that have one or more of the following characteristics: surplus labor, low-income agriculture, outmigration of population, or limited industrial employment.

THE INDIANA STUDY

Data for the study were obtained by a personally administered questionnaire in the fall of 1959.[2] The industries interviewed were

[1] The chronic labor surplus areas tend to be concentrated geographically. As of September, 1960, 82 of the 96 major and smaller labor surplus areas were located in three regions: the Northeast contained a total of 39 chronic labor surplus areas (16 in Pennsylvania alone); the Upper South, including North Alabama, accounted for 28 (12 in West Virginia alone); and Illinois, Indiana, and Michigan accounted for a total of 15 areas.

Agricultural underemployment is concentrated heavily in the South and in adjacent areas including southern Ohio, Indiana, Illinois, and Missouri. At least 500,000 farm workers are now underemployed in rural areas where local nonfarm employment is contracting or not expanding at a rate fast enough to furnish jobs for those willing to work.

[2] Information was supplied by officials in 72 of the 82 firms (ten declined to be interviewed) that had located new plants in southern Indiana between January 1, 1955, and December 31, 1958. Forty-four of the 72 new plants were operated as branch plants or subsidiaries. A total of 4,548 production workers were employed in 58 of the new plants that had initiated production schedules by December, 1958. Of this job total, 432 places were filled by skilled workers from outside the area.

TABLE 1

New Firms' Rankings of Location Factors*

	High	Medium	Low	Not Ranked
Markets	49	10	11	2
Labor	50	9	9	4
Raw materials	39	17	13	3
Transportation	42	22	7	1
Utilities	15	25	28	4
Community facilities and attitude	13	23	32	4
State and local legislation	13	23	32	4
Taxes	11	30	26	5

* The several elements that might be considered in the location decision were present in greater detail in the questionnaire but are summarized under the eight headings listed.

grouped by the U.S. Bureau of Budget's Standard Industrial Classifications and then reclassified into seven broader categories: agricultural processing; woods and stone products; textile, clothing, and leather products; printing and publishing; chemicals, petroleum, and plastics; primary metals; and fabricated metals, machinery, and equipment.

Location Factors

Managers' rankings of eight location factors showed that labor, markets, transportation, and raw materials were the most important in influencing industrial plants to locate in southern Indiana (see Table 1). The area offered its new plants access to large population concentrations to the north, south, east, and west, a circumstance attractive to manufacturers of consumers' goods. Manufacturers of producers' goods also had sales opportunities because of the tendencies of the manufacturers to whom they sold their products to concentrate in the area. In addition, the area offered several unique raw material sources as well as access to regional and national input sources. Truck and rail facilities were adequate for transporting the majority of the new plants' inputs and outputs, and labor was abundant and trainable.

Except in a few cases where personal preferences decided the plant location, sites were selected primarily on the basis of economic factors.

The Location Decision

Who Makes It?—Of 69 managers who were familiar with the initiation of the location decision, 51 indicated that a company executive was responsible, 11 said it was a company department, two said industrial consultants, and five listed other influences, including customers' suggestions, the board of directors, and a Chamber of Commerce. In 51 plants, the final location decision was made by an individual; in 19 plants, the final selection was a group decision; in two firms, the managers were uncertain as to who had made it.

Sources of Information.—Almost half the location decisions were based on information or personal knowledge obtained by one of the firm's executives; only six plants received and used information from a professional consultant. When sources of information were ranked (see Table 2), local community groups typically proved more helpful than other agencies, with the utility companies a close second.

The Community's Role.—The study showed that community actions influenced a small but significant number of southern Indiana plant location decisions between 1955 and 1958. These actions centered on economic incentives rather than on noneconomic or environmental factors.

Forty of the 72 firms interviewed selected

TABLE 2

New Firms' Rankings of Location Assistance

	Very Helpful	Somewhat Helpful	Not Helpful	Not Rated
Local Chamber of Commerce	17	11	13	31
Local industrial committee	17	5	12	38
Local government	10	10	14	38
Local planning commission	7	3	17	45
Professional location consultant	5	1	14	52
State Chamber of Commerce	4	5	21	42
Trade associations	2	3	14	53
Utilities	16	10	8	38
Railroads	9	10	8	45
Others*	15	2	-	55

* Ranked high in this classification were the Indiana State Department of Commerce and Public Relations, realtors, local businessmen, and the Kentucky Chamber of Commerce.

their sites without the influence of community action. Twenty-one firms obtained community location incentives that they regarded as important. Fifteen of these firms did not consider the incentives crucial to their location decision, but six firms reported that they chose their sites primarily because of the incentives offered (see Table 3). The remaining 11 firms' sites were either selected for personal reasons, or the basis for the decision could not be identified. It is interesting to note that seven firms listed community actions designed to discourage location in the community. However, in only one instance were these actions successful in preventing location.

The 21 firms that benefited from volitional community action employed 2,877 (63.3 per cent) of the 4,548 workers in the 58 operating plants. These firms were not concentrated in any specific industry or group of industries. The six firms for which the location incentive was of primary importance employed 783 (17.2 per cent) workers and were mainly fabricated metals, machinery, and equipment manufacturers.

When Are Incentives Effective?

Discussion of the geographic aspects of the site selection with firm personnel indicated a three-stage process. The first step involves selecting a major geographic region—the Ohio Valley or the South Atlantic region, for example. The second step involves comparing specific areas within the general region—southern Indiana or western Kentucky, for example. The final step is the selection of specific sites within the area.

Community actions were more effective in determining the site within a particular area (community X in southern Indiana, for example) than they were in determining either the specific area or the general region (central midwest, for instance). In other words, community action was effective primarily at the third stage of the process outlined above. Twelve of the 21 firms that received location incentives had not considered other specific sites. The six firms whose final location decisions were based primarily on the incentives offered had compared two or more communities in which economic and noneconomic factors, except for the specific incentives offered, were about equal.

Table 3 shows that effective community actions centered on economic rather than noneconomic or environmental factors. Incentives received by the six firms who based their site selection primarily on incentives offered were entirely economic. The 15 other firms that received what they regarded as important location incentives also reported only economic incentives.

However, there were indications that noneconomic factors were also influential in the location decision. Noneconomic factors be-

TABLE 3

Location Incentives Supplied Successfully to Six Industries

Industry Group	Number of Employees	Principal Incentives Offered	Industry Commitment
Fabricated metals, machinery, and equipment	268	Help in financing site and building	Long-term repayment
Fabricated metals, machinery, and equipment	225	Help in financing location move	Long-term repayment
Fabricated metals, machinery, and equipment	132	Help in selling stock, financing railroad spur, building and financing plant	Long-term repayment
Agricultural processing	103	Free site, plant financing	None
Chemicals, petroleum, and plastics	40	Free site and plant	None
Fabricated metals, machinery, and equipment	15	Reduced taxes, low rent, facilities made available	None

came relatively more important as the number of skilled workers or managerial personnel transferred from other locations rose. Apparently, firms respect the unwillingness of personnel to live in communities that do not have a minimum of social and cultural facilities. Salary increases and/or promotions were cited as ways of overcoming this unwillingness. Comments from firm officials indicated that they did not consider noneconomic factors an issue about which they could bargain with community leaders. If a minimum level of community facilities was not met, there was a tendency not to consider the community further.

Information obtained from the new managers concerning the relative importance of economic and noneconomic factors was inconsistent with the impressions held by many community leaders in the area. When questioned, these leaders tended to stress noneconomic factors. One reason for their attitude may be that firm personnel working on plant location have usually analyzed a great deal of published economic information before they visit proposed sites whereas noneconomic data are not available to them from other sources and thus constitute a disproportionately large share of the information they seek from local sources. The attitude of community leaders has also been reinforced by community self-evaluation forms circulated by several large corporations.

Urban vs. Rural Sites

In southern Indiana, community size was not directly related to ability to attract either new firms or new manufacturing jobs. If the percentage of population of southern Indiana communities is used to indicate the expected share of new industry and manufacturing employment, we find that communities under 5,000 population gained more plants and manufacturing jobs than communities with a population of 10,000 and over (see Table 4). This implies that from 1955 to 1958, rural communities in southern Indiana were less limited in their industrial development than urban centers. However, these smaller communities were located in the more heavily populated counties, and the counties were located within the area's mainstreams of commerce and trade.

Rural communities seemed to have a comparative advantage in attracting plants that (1) employed up to 50 workers, (2) did not require a highly skilled labor force, (3) were drawn to a local source of raw material, (4)

TABLE 4

Relation of Community Population to Number of New Plants

	Community Population			Total
	0-4,999	5,000-9,999	10,000+	Firms
Southern Indiana communities	127	11	8	146
Population	144,833	72,735	307,424	524,992
Percentage of southern Indiana population	27.6	13.9	58.9	100.0
Communities attracting new plants	23	8	8	39
Number of new plants	23	20	39	82
Percentage of total	28.0	24.4	47.6	100.0
New plant's employment*	1,755	1,075	1,718	4,548
Percentage of new employment	38.6	23.6	37.8	100.0

* The new employment was taken from 58 plants. Of the 72 plants that gave interviews, 14 were too new to have more than "skeleton" crews. When these expand to their anticipated job needs, the results will show that new plants favor communities under 10,000 in approximately a 2:1 ratio.

did not require another local industry to service them, (5) would be near similar industries, (6) had access to adequate rail and road transport, and (7) had management that liked a rural atmosphere.

Since the share of industrial employment in the nation's standard metropolitan areas continued to expand between 1954 and 1958, the southern Indiana experience may be more typical of areas on the periphery of the major industrial belts than in other parts of the nation.

POLICY IMPLICATIONS

Community Efforts

The preceding analysis shows that local groups attempting to increase their community's rate of industrialization might adopt an analytical approach to determine those industries whose site and production requirements are most suited to their locality, and to select the best method to contact and attract prospective firms in those industries.

Such an approach might be acted upon by: (1) surveying and classifying local resources bearing on industrial development; (2) separating those resources that are subject to community control from those that are not; (3) analyzing local resources to determine which industries have the most local development potential; and (4) directing industrial efforts toward these industries by discovering as much as possible about the specific cost factors involved in their production and distribution processes, and by seeking out and emphasizing to firms in these industries the profit potential, or cost savings, available at local sites.

Another analytical approach is to identify the kind and source of industrial inputs purchased by local industry, and then to investigate the possibility of producing these inputs locally. Some larger cities are already considering this method as a way of increasing local employment.

A third alternative is for several communities to cooperate in their industrial efforts. Specific resource analysis and group action would follow the patterns already outlined in the first two approaches. Although every small town wants job opportunities for itself, it may get them only by combining forces with other small towns in the area. Workers can commute, and a portion of the new jobs may be better than no jobs at all. Cooperative community action aimed at industrialization is particularly relevant to redevelopment areas where rural towns are small and widely scattered.

After the surveys and classification of local resources are completed, industrial efforts in small communities may well be devoted to the selective dissemination of economic data and the effective manipulation of factors subject to local control. A minimum of noneco-

nomic data is required. On the other hand, large communities might spend a greater share of their industrial effort on promoting noneconomic factors because the larger the community, the greater the probability that location decision-makers already have data on its economic advantages.

These different courses of action suggest that community leaders could evaluate their position in certain situations where location incentives are being used to bargain with interested firms in terms of a cost-benefit framework like that used in evaluating projects for the development of natural resources. Evaluation on this level could help clear up the controversy that centers upon the use of the term "subsidy" when location incentives are used to attract new firms. Location incentives can be viewed as the community investment of local resources in order to stimulate local industrialization. This investment can be weighed with respect to the returns that it is likely to bring to the community as a whole, the distribution of the direct costs of the incentives themselves, and the indirect costs of expanding public facilities to service the new firm.

Communities should also recognize that attracting new industry is only one way for the area to increase its rate of industrialization. Other alternatives include facilitating the expansion of industrial firms already situated in the area or preventing the loss of their current employment, and creating new and independent local enterprises. Too often, communities fail to fully analyze their motives for attempting to attract industry and, consequently, overlook the measures that may provide more local benefits than a new plant.

Regional Development

Criteria that will lead to action must be established in order to achieve the effective implementation of regional development policies initiated by state, regional, or national groups, public or private. Such criteria would identify regions most in need of development aid and point out the areas within these regions that are in critical need and have the greatest potential for development. Economic growth indicators, such as the amounts and kinds of physical resources, population, employment in primary, secondary, and tertiary industries, wage and income levels, education levels, and health standards, could be used to determine the level of a region's economic development, its rate of economic growth, and its points of greatest growth potential. Community or city analysis may supplement a broad regional analysis.

A framework for effective industrialization and regional development should be developed simultaneously with the identification of potential areas of policy application. This framework should involve consideration of the following: (1) in any region there are a limited number of development variables capable of local control; (2) there are relatively more development variables of an autonomous nature than there are of a volitional nature; and (3) the longer the time period involved in the development program, the more variables that may be controlled by local effort.

Policy concerning regional development may take one of four general directions. *First* is a policy of *laissez faire* towards areas or regions currently possessing low rates of economic growth. This may ultimately lead to a development pattern in which the comparatively large urban-industrial centers keep their development advantage, and the small rural centers decline in size and economic potential.

A *second* course would be a policy of uniform treatment for all areas, regardless of their level and rate of economic growth. Such a policy would tend to raise the absolute levels of economic growth in all areas, but widen the development gap now existing between the poorly and richly endowed areas. If development resources were applied equally to both low- and high-income areas, the marginal productivity of such resources would be greater in the more abundantly endowed areas than in the poorer regions.

A *third* development policy would be to concentrate development resources in the richly endowed areas. Such a policy would

widen the development gap between the areas, but might provide more employment opportunities for population migrating from the poorer areas. Indeed, a policy of this type, to be most effective, should include provisions to encourage outmigration from the poor areas to those capable of sustaining rapid economic growth through such measures as interarea employment information and loans and grants for retraining.

A *fourth* approach would be a development policy designed to step up the rates of economic growth in the more slowly developing regions. A policy of this type would tend to narrow the development gap between the richly and poorly endowed areas.

It is significant that the majority of domestic economic development bills introduced in the recent sessions of Congress have concentrated their attention on the fourth course. Specific techniques have included subsidization for the decentralization of industry, provisions for technical assistance to management, aids for improved education and training facilities, and improved job information services.

Decentralization of industry outside the urban-industrial and population concentrations is not generally taking place at a rate fast enough to close the present development gap. The results of the study referred to earlier in this article showed that, unless the local area had unique input sources, sites closer to market outlets were preferred. Specific community volitional forces were capable of attracting firms in some industries to local sites; these sites, however, were not far from existing economic channels. Thus, unless the decentralized plant could attain some advantage over similar plants in the area or region, a program of continued subsidy might be necessary to maintain the plant in the comparatively disadvantageous location.

Provision for technical assistance from a state and/or federal source could solve some of these problems. Technical assistance would help existing manufacturing plants with production and marketing problems, but need not necessarily be concerned with problems of plant location. This assistance might also help communities develop an analytical approach to industrialization along the lines suggested above.

Improved education and training facilities can aid the more slowly developing regions in several ways: For people migrating from the area, they can provide training that can be used in outside employment; they can also provide training for those remaining in the area—this would increase the area's pool of skilled labor, which, in turn, would aid in attracting high-skill job opportunities with correspondingly high pay scales. The facilities themselves would, of course, aid in attracting those managements that could use them in advanced training programs.

Improved job information services in areas with comparative disadvantages would help to increase the mobility of labor to job opportunities both within and outside the area. However, the effectiveness of this type of aid in a labor surplus area in the absence of expanded vocational training or retraining is limited. Employment opportunities for unskilled workers are relatively few, and openings are generally filled quickly by local people. In addition, the labor force does not often have the specific skills that are in greatest demand by industrial plants, and the age of people who most want and need employment may be unacceptable to industry. Job information services could help most in tertiary employment; here, unskilled and older workers can be readily employed.

A regional economic development program designed to promote more equal employment and income opportunities for people in an area characterized by comparatively low incomes and surplus labor should concentrate industrialization efforts in those portions of the area showing the most growth potential; provide for technical assistance in production and management to individuals and groups within the area; attempt to improve the education and training facilities of the area; and promote improved employment information services within the area and outside it with particular emphasis on service employment.

GRANT H. CALDER

THE PECULIAR PROBLEMS of a Family Business

THE FAMILY business has played a vital role in the growth and development of the American system of free enterprise. Some of our largest and most successful corporations were founded as family businesses—the Firestone Tire & Rubber Company, Standard Oil Company of New Jersey, E. I. Du Pont de Nemours Company, and Ford Motor Company, for example. These family businesses have met with financial success and have grown rapidly into huge corporations with numerous plants located in many countries of the world. Other businesses founded as family enterprises have also shown unusual growth but have retained the ownership rather closely within the small family group. Eli Lilly and Company, Lincoln Electric, and Whitin Machine Works illustrate this type of firm.

Other family businesses, however, have not been so successful. Difficulties of various kinds have caused them to alter their policies and operations. Some have been sold to larger or competing companies, while others have been merged or consolidated. Some have met with failure and liquidation. Others have remained small and, in numerous instances, under family control for many generations. It is with this last group that this article is chiefly concerned.

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THE PROBLEMS

An analysis of approximately forty small manufacturing firms has been undertaken for the purpose of isolating the many problems that are peculiar to the small family-controlled business. These companies were selected from all sections of the United States and include manufacturers of many different products, such as leather goods, light steel products, pottery, appliances, toys, processed meat, pharmaceutical products, and beverages. All these case studies point up the vital role that management plays in determining success or failure, and because of this role the problems of management predominate in the following classification of the major problems of the small family-controlled business:

Management procurement
Management training
Management succession
Management motivation
Delegation of responsibility and authority
Managerial organization
Need for outside assistance
Division of equity
"In-laws"
Keeping family employees "in line"

In addition to the many problems associated with the family business, there are a number of definite advantages, which will be detailed in a concluding section. These give hope for the future success of the small family business.

Management Procurement

The difficulties in procuring capable management for the small family-controlled business are many. Seven of the most important ones are mentioned here, but only the first will be treated in a detailed discussion, which should illustrate the ramifications of the problems.

1 The first problem concerns the limited field from which capable management for family firms may be recruited. When management personnel are restricted to family members, the possibilities for obtaining effective leadership are seriously limited. Though the family business may recruit management from outside the family as well as from among the employees working for the family concern, the peculiarities of this type of ownership limit the number of people who will be attracted.

The rather common procedure of selecting members of the family to provide leadership for the company presents many difficulties. In the first place, the most capable person may not be obtained, either because the selection is limited to a small group or because the oldest son is given priority even though he may not be the most able. The founder of the business may have been a capable manager, but managerial ability is not necessarily inherited. In the second place, the founder of the business, although he may impart the necessary intellect to his offspring, may not be a successful teacher, and his methods of coaching his sons may not produce the most efficient managers. And in the third place, the heirs to a family business may not possess sufficient interest in or aptitude for the business.

Difficulties are also frequently encountered in obtaining competent nonfamily management. For instance, the Donald Company, manufacturer of light steel products in the Southwest, found that young well-trained engineers hesitated to accept employment with the company because the business was family controlled. The applicants feared a lack of stability of the company and also a lack of opportunities for promotion. The founder of the company was of retirement age, and his two sons, who would doubtless inherit control of the company, were young and inexperienced. The young engineers feared that they had no future in such a family firm.

The chief difficulty encountered by the Johns Company, a small toy manufacturing firm located on the Pacific Coast, in retaining its outside-the-family management stemmed from the fact that the directors did not recognize the qualifications required of its management and employed individuals who were ill-prepared to perform the necessary functions. The directors seemingly did not comprehend the complicated nature of managing a small business with its wide variety of duties. The young managers would often become discouraged and find other employment when they found it difficult to put in the great amount of time required by their jobs and impossible to meet the demands made on them.

The Rogers Corporation, a small family boiler manufacturing firm in the Middle West, encountered similar difficulties when it employed an engineering graduate to manage the company as successor to a family owner who wished to retire. This engineer was offered the salary that was paid to other graduates for working a regular forty-hour week and was given a bonus based on the sales increase of the firm. The new manager was expected to supervise the company as it had been previously supervised, that is, to serve as a one-man owner-manager and perform all the varied duties of the company from general accountant to chief salesman. In evaluating his per-

formance, the owners failed to consider the multitude of duties associated with the operation and the limited ability and experience of the young engineer.

The foregoing illustrations show that recruiting capable management from outside the family often proves difficult. Many capable people hesitate to accept employment in these family firms because they fear domination by the family members; they also fear insecurity that would result from changes in the control of the business and from the inability of the small company to accumulate the reserves needed to tide it over business recessions and periods of adjustment. They recognize the fact that the family members expect them to assume great responsibility and to work long hours, yet often they can expect to be compensated only as employees, not as owners. There are, on the other hand, family firms that provide the best of working relations for their outside-the-family employees, having recognized the importance of these individuals to their organizations. This recognition is necessary if capable people are going to be attracted to the family business, and the family firm must provide them with the proper incentives to compensate for the drawbacks attached to family control.

The Frank Company, manufacturer of leather products in an Eastern state, is a firm that has experienced little difficulty in obtaining competent junior management personnel to supplement the family members. This is true despite the fact that it has been operated for many generations as a family-controlled partnership, and family members have always held the top management positions. For many years, this company has recognized its dependence upon its employees and has developed favorable relationships with them. Although it is recognized by the junior executives that they will not be eligible for any of the top managerial positions, they are content to work for the company because of the cordial employer-employee relationships. The employees are afforded latitude in their work and in arranging vacations, and a pleasant informality exists between workers and owners.

2 The second of the seven problems of securing capable management for the small family business is that the individuals selected must be adaptable to the environment of the family business and its location—and such persons are usually difficult to find. For instance, a person who has worked in a large public corporation might well encounter difficulty in adjusting to a small family business where few staff assistants are available and where family relationships play a dominant role.

3 The small family business ordinarily finds it difficult to match the salaries paid by the large corporations and must rely on other inducements.

4 Frequently, the future of the manager in a small family business, insofar as promotions and security are concerned, is not as bright as in the larger firm; consequently, many individuals will hesitate before accepting employment in a family business.

5 Because of family conflicts, which are frequent in many small family businesses, individuals sometimes shy away from employment in them.

6 The uncertainty that exists in the family firm itself, as a result of the problem of management succession and continuity, lessens its attractiveness.

7 The responsibilities placed upon the management of a small family business are so extensive and varied that relatively few people can really qualify for the positions.

Management Training

After capable managers have been secured for the small family business, the second major task is to train them and help them adapt to the peculiarities of the particular business. Four major problems are involved in the training of management personnel.

First, the small business is so dependent upon the manager and he usually has so little capable management assistance that he is unable to leave his business long enough to take advantage of management training available to him—advanced management courses provided by universities, refresher school training

scheduled by the trade associations, and business conferences.

Second, within a small family business, it is often difficult to find individuals who have the ability and time to train prospective managers. Sometimes the owner-manager is a poor teacher, or he may be so completely occupied with the details of the business that he has little time to supervise a training program. Furthermore, his concern for the many details of the business may make it difficult for him to give his trainees the proper perspective of the management job as a whole.

In the Harwood Company, a typical small firm manufacturing cabinets, the owner-manager was so completely occupied with detailed supervision of the business that he had no time to give his sons the training and the perspective they should have had. As a result, his company suffered when he was forced to retire and leave his business in the hands of individuals without the proper know-how.

In the Hobson Corporation, a pharmaceutical manufacturing company in the Middle West, the training methods were likewise inadequate. Daniel Hobson, the only son of the owner-founder, had been told by his father that, in time, he would be given the family business to operate. He was sent to an outstanding graduate business school where he sought answers to many specific problems that he knew would confront him and for which his father had failed to provide solutions. He wanted to have a better understanding of the human relationships that should be maintained between owner-managers and capable junior executives who have been employed from outside the family, and of what he might do to develop favorable working relationships with these junior executives. Many were older than he and had had much more experience in working under pressure.

The older Hobson had not taken his son into his confidence and had neglected to provide him with the experience that he had given the other junior executives. The son had not been invited to attend the noon luncheons where the policies of the company were discussed and had not been given the kind of executive development that would be necessary to bridge the gap when it was time for his father to retire, or, more probably, when he might die unexpectedly. In a sense, Hobson, Sr. had neglected to ensure continuity of management operations, which is extremely important for this type of business.

Third, there is a tendency—especially where training is carried on wholly within the organization and the father is responsible for the training of the son—to inbreed and perpetuate the same management techniques, although some may not be the most efficient. This method proved highly satisfactory in the case of a company where few changes were made in the construction of musical instruments for a number of generations; in other fields, however, where more rapid changes are taking place, this method of training for management succession in family-controlled businesses may have its limitations.

Fourth, the physical facilities for training prospective managers in the small family-controlled firms—vestibule schools, cutaway models, and visual aids of all types—are frequently not available.

Management Succession

The importance of training for management succession in the small family business and thereby providing for continuity of management can hardly be overemphasized, but, unfortunately, the owner frequently fails to consider his own retirement. For him to select and train his own successor is thought comparable to building his own casket. He may make provision for the replacement of a machine that wears out or construct a larger plant when the one in use becomes too small, but he commonly thinks of himself as nonexpendable in relation to the business and makes no attempt to provide a replacement.

The small business also frequently finds that it cannot afford to employ as many individuals in its organization as may be needed to provide trained management succession. The company would use up the profits that might be needed to provide a livelihood for the family members in the business or the capital

needed for expansion. There is also the possibility that the small firm would be deprived unexpectedly of the adequate leadership of the owner-manager. The larger company, on the other hand, has a wider field from which to draw experienced leaders as needed.

Many family-owned businesses suffer when the owner grows old, slows down in his physical activity, becomes more conservative in his thinking, and is unable to provide the business with the dynamic leadership that may have been reponsible for its growth. Junior executives could bring to the organization the new thinking and enthusiasm that it needs.

Though most of the small family businesses studied showed a lack of concern for adequate management succession, the Frank Company offers a refreshing exception. This company has done an unusually effective job in training for management succession. The responsibility for the development of the junior members of the family is the job of the senior members whom they are to replace. The juniors are taken into the firm at an early age and are given a thorough indoctrination. They are trained in all the operations of the business under the close supervision of a senior member. Great pride is taken in the traditions and long successful period of operation of this company, as well as in the fact that the business has been handed down from father to son for eight generations, that the company's history has been free from labor disputes, and that it has continued for such a long period of time to manufacture an unusually high-quality product. The business becomes all important in the lives of these people, and the junior executives are motivated to carry on the traditions. For this company, continuity of management is of the greatest importance, and it sees to it that junior members become completely indoctrinated with company procedures and yet maintain an open mind so that necessary adjustments in policy can be made to meet changing business conditions.

Motivation

As important as selecting capable managers and giving them satisfactory training is the problem of motivating management personnel. The author's study has shown that the most effective motivating devices for the small family-controlled business are these:

Recognition to the individual that provides him with a feeling of importance and a sense of belonging to the organization

Safeguards against family friction and undue family interference

Maximum security through pensions, retirement programs, fringe benefits, and long-term management planning

Congenial working relationships by adherence to the philosophy that contented management is generally efficient management

Encouragement and stimulation through appreciation of efforts and accomplishment

Delegation of authority and responsibility so that management can have the satisfaction of a justified pride in accomplishment

Adequate compensation based on the efforts and contributions of the individual, whether a family or nonfamily member

Permission to purchase equity securities in the company.

The experiences of the Johns Company show that various incentives had to be given to outside management in order to secure satisfactory results in its plants; the most effective incentive was the payment of salaries comparable to those given for similar employment in the community plus a bonus based on a percentage of profits before tax. This participation in the profits of the company, which frequently amounted to several thousand dollars annually, gave to the managers a feeling of ownership, even though they did not possess equity securities. It also made them cost conscious and compensated them in part for their long hours during the peak season and for the responsibility they assumed. Other incentives offered by this company included health and accident insurance, personal consideration in matters of vacations, sick leave, assistance in purchasing homes, and similar accommodations. One of the primary objectives in offering these incentives was to induce management to stay with the firm. The company recognized the high cost resulting from rapid turnover.

The Davis Company, a small appliance

manufacturer, also had an effective motivation program. In the first place, unusually harmonious working relationships existed both among the owner-managers and between managers and employees, for whom the greatest consideration was shown. The matter of adequate compensation for the manager-partners was assured by an arrangement whereby, once each year, the salaries and division of profits were frankly discussed on the basis of contribution made by the various individuals; adjustments were made where deemed advisable. Furthermore, elaborate written agreements, relative to work assignments, division of authority, and similar matters, were provided to guard against misunderstandings and conflict among partner-managers. Adequate security was provided through assurance of continued employment in the company throughout the life of the individual, and special concessions were provided for the later years so that the partner was not expected to work as hard as before. And finally, the personal security of the managers was reinforced by the financial security enjoyed by the company itself.

Delegation of Responsibility and Authority

In addition to the problems of securing, training, and motivating management, there are other management problems of real significance. One of the chief difficulties arises from the inability of the typical owner-manager of the small family firm to organize the functions of his business effectively. He frequently has difficulty in delegating responsibility and authority.

The owner of the small company usually goes into business for himself because he likes to be his own boss. His principal assets are his own skill and experience. He works long hours and, characteristically, is poor at delegating reponsibility. His business becomes his very life, and, because he is so concerned about its success, he frequently supervises every operation. As the firm grows larger and the functions to be performed become more numerous, the small enterpriser still clings to his work methods. He refuses to delegate responsibilities and finds himself unable to take care of all the details. As a result, the organizational structure breaks down because decisions are left unmade, and, as A. D. H. Kaplan says, "Successful little fellows are observed growing toward bankruptcy."[1]

In the Oscar Company, a family-owned business located in a Northeastern state and engaged in the manufacture of toy musical instruments, the owner of the firm for more than thirty years personally opened the establishment each morning a half-hour before the employees arrived, took care of various routine matters in preparing for the day's work, remained throughout the day to supervise operations, and personally locked the plant in the evening after the employees had gone home. The tools used by the workmen were kept in a specially constructed tool compartment, and the owner kept the only key. He personally checked out the tools to each workman and was so proud of them that he guarded them as he did his money. The owner's pride in the tools and his reluctance to allow others to use them had limited their usefulness.

The owners of many small businesses, because of their personal characteristics, find it easier to do the work themselves than to teach other persons to do it for them. Consequently, work assignments are not made, and time is lost while workers wait for instructions from the managers. When the owner-managers are absent from the plant because of sickness, vacation, or some other reason, their subordinates accomplish little.

Managerial Organization

Under some circumstances, the problem of seniority for family members may cause organizational difficulties. In general, the older members of the family are given the top positions, and the junior members are in subordinate positions, regardless of the ability of the individuals involved. The B. F. Jackson Company, manufacturer of brick and tile products,

[1] A.D.H. Kaplan, *Small Business: Its Place and Problems* (New York: McGraw-Hill Book Co., Inc., 1948), p. 11.

encountered a difficult organizational problem involving the two sons of the owner-founder. The younger son possessed greater managerial aptitude than the older son, and the father was faced with the problem of assigning the younger man to a position in which he would supervise the activities of his older brother. It was only after considerable persuasion by his staff associates that the father consented to a promotion for the younger son and approved for him a salary substantially larger than that of the older son. This was a difficult decision for the father, but the morale of the working force would no doubt have been adversely affected if an incompetent individual had been assigned—solely on the basis of seniority—to supervise them. Because of comparable situations in many family businesses, the small family-controlled firms are seldom afforded the best utilization of their man power.

Another problem connected with ineffective organization arises in a family business when the board of directors does not properly carry out its functions, but exists in name only. The board of directors in a Western tool manufacturing firm, for instance, merely fulfills the legal requirements for the corporate form of organization and seldom holds any formal meetings. The directors of the corporation are also the officers of the company, and the board has never exercised its veto power or formulated any constructive policies. There is a real need in this company for the kind of leadership that could be afforded by an alert board of directors. But, instead, they are content to leave all policy-making and control to one individual who, unfortunately, is incompetent.

Need for Outside Assistance

A significant management problem results from the innumerable duties that the owner-manager or the manager of any small family-controlled business must perform. Since, naturally, the manager is unable to perform all functions equally well, his special abilities should be supplemented by those of outside technical assistance. Invariably, the family business will be shaped by the particular skills of the owner-manager, and if staff assistants can be obtained to complement the abilities of the manager, a much better-balanced company will result. Likewise, management consultants may render real service to the small family business by evaluating the operations and giving much-needed advice. For their contribution to be worth while, however, management must supply tools in the form of adequate records and a cooperative attitude. Furthermore, management must be receptive to suggestions and capable of making use of them.

The Chip Corporation, a small meat-processing firm, failed to utilize properly the services of its consultants. Following its expansion program during World War II, this company recognized that it was in need of assistance and employed a prominent firm of management consultants. The management seemed to think that the consultants could work miracles by themselves and that, merely by employing them, the company would be out of its difficulties. The firm paid the consultants a large sum to analyze the operations of the company—but paid no attention to the recommendations.

The following year, the company paid the consultants another large fee for a return engagement. The advice of the consultants was not useful to the Chip Corporation because the groundwork had not been laid for their services. Adequate records had not been kept; therefore, the consultants were unable to gain the proper perspective of the business. The basic problem of the firm was that the management had been unable to divest itself of outmoded methods of doing things. It failed to visualize the company's operations in the light of its new environment. This firm had a one-man management that was incapable of supervising a business as large and as complex as this one had become. Finally, the firm's plight became so critical that the bankers were forced to intercede. A competent and successful manager with many years of experience in this type of business was employed by the bankers, and a program of retrenchment and consolidation has set the company on its way to recovery.

Division of Equity

Satisfactory division of equity is another of the problems that commonly confront the family business, according to the firms studied.

The J. F. Gunn Corporation, a metal parts manufacturing concern in the Southwest, presented an interesting problem in connection with the division of the founder's estate among his three children, two boys and a girl. His estate was composed primarily of stock in the family corporation. The sons were both actively engaged as junior executives in the small corporation and looked to their salaries for their chief return from the business.

The daughter, on the other hand, married and moved away from the area where the family business was located. She and her husband had little interest in holding stock in the family firm because the company had a policy of distributing earnings in the form of salaries; only nominal dividends were paid. The daughter, however, did not feel that she should be deprived of her heritage simply because she was a girl and did not elect to work in the family business. The brothers, who were the only potential buyers of the stock, indicated that it had a value of $1 a share, which was the price the stock sold for in 1914 when the corporation was first organized. Today, however, the stock has a book value of nearly $6 a share. Obviously in this case, a fair division of the father's estate was difficult to make because of the complicated nature of the salary and dividend policies.

In the case of a small pottery firm in the South, the founder of the business divided the stock among his four children, two boys and two girls. He then paid an investment counsel a large fee to set up a trust agreement so that the ownership in the family business given to the daughters would, according to his conception, prove most advantageous to them. Care was taken to make it nonattachable; thus, it was impossible for the girls to dissipate their stock or for the stock to get into the possession of any other individual. A provision was made that, in the event the stock was to be sold by the trustee, it first must be offered to either or both of the two sons for purchase. The father and the investment counsel failed to recognize, however, that because of the characteristics of this stock (it was closely held, relatively speculative, and subject to management hazards) it might be ill-adapted to the investment needs of the two daughters. If more attention had been given to diversification, a portion of the holdings could have been sold, a wider market for the stock would have been created, and more satisfactory securities could have been purchased. The father did not recognize the fact that others might not be able to manage his company as well as he had and that the stock of his company might prove to be a poor investment for individuals not actively engaged in the business.

In the Harrison Company, where the founder of the business divided his equity among his five children (four boys and one girl), the family business likewise comprised the bulk of the father's estate. Some of the members of this family obtained employment outside the business and desired to use their share of the estate in their own endeavors. They found, however, that the stock inherited from their father could not be sold because there was no market for it, that it could not be hypothecated, and that the business paid no dividends. The sons who were actively engaged in operating the business felt that they were being discriminated against. Most of the earnings had to be plowed back to liquidate debt and provide for expansion; as a result, salaries were low and there were no dividends. Furthermore, the sons had no funds with which to purchase additional stock in order to gain control of the company. Family conflict resulted, as it frequently does when an attempt is made to divide the equity of a closely held family business where the bulk of the estate is tied up in a single business.

In-Laws

The problem of in-laws frequently complicates the operations of a family business. Usually, as long as the members of the family are single, family loyalty permeates the organization; the business belongs to "the family," and the group shares a mutual pride and interest in

the endeavor. However, difficulty arises when the members marry and their in-laws attempt to enter the inner circles of the family business. The in-laws may not share the interest of the children of the family, who have seen the business grow, often under hardship, and they often feel that the business forms a wedge between them and their partner. There are also differences in spending and saving habits, as well as in the philosophy of in-laws and family members toward the importance of the family business, family relations, leisure time, and other considerations; such differences inevitably lead to conflict and have repercussions on the business itself.

An example of such a conflict was found in a small family cabinet manufacturing company, in which the wife of one brother had been reared in a family that had spent its income freely on clothes and recreation, and had little concern for saving and security. Her philosophy conflicted with that of a second brother's wife, who was interested primarily in saving and building up an estate for her family. Because the one wife drove new cars and spent the entire income of her husband, there was pressure from this source to increase salaries; in contrast, the other brother exerted pressure to liquidate the debt of the company and expand the business with the anticipation of increasing future profits and gaining greater security.

Keeping Family Employees "in Line"

Still another problem prevalent in the family-owned business is that many of the decisions are made on the basis of emotion and sentiment rather than upon logic. Furthermore, it is sometimes difficult to keep family workers "in line." Too often the owner-manager insists that Junior work in the factory and then discovers that none of his superiors dares to discipline the young son because of possible repercussions. Junior is quick to recognize his exalted position, and his services often prove to be harmful to the company because of the favoritism shown. In some instances, family employees have been afforded special privileges in working hours, vacations, shifts, and work assignments. As a result of these conditions, the morale of other employees is impaired, and production schedules are affected adversely.

In the Gunn corporation, it was found that family members would frequently work on personal projects while employed by the company. In one instance, one of the family members constructed a small fishing boat for his own use while being paid by the company. His father was the production superintendent and seemed to exert little control over his son's activities. The incident caused friction among the employees and had an unfavorable effect upon plant morale.

In still another case, it was found that the family employees, because of their feeling of ownership in the business, would frequently leave their work assignments to take care of personal affairs. In one company, the wife of an employee did not hesitate to call her husband on the telephone while he was working and ask him to do special favors for her; some of these errands consumed much of his working time.

Not only is it difficult to keep family workers in line, but the owner-manager may also be difficult to control. The family manager of one company frequently refused to accept the decisions of the other members who served on the board of directors, and went ahead with his own decisions. In a public corporation, such actions would have been grounds for immediate dismissal, but this was apparently impossible in this family concern. Furthermore, since the business was the property of the family, the manager exercised jurisdiction over the assets of the family corporation as if the property belonged to him alone. This sense of ownership greatly affected the decisions made for the company and determined the relations of the board of directors with the manager.

This feeling of personal ownership of a family business sometimes makes it difficult to keep management in line. Such a problem arose in the case of the Stone Company, a small steel-fabricating concern. The family members worked long hours and had their own assets intermingled with those of the fam-

ily business. In some cases, their own personal property would be used for the benefit of the family business, just as the property of the business was sometimes used for the personal advantage of the individual. At times, the family members were forced to endorse the notes of the company or to mortgage personal property to secure the loans of the family business; conflict inevitably resulted. This intermingling of personal assets with those of the family business causes a laxity that frequently results in poor control, which is not uncommon in some small family businesses.

THE ADVANTAGES

We have placed emphasis upon the many problems facing the small family business—and often they are very complicated. But in all fairness to the family business, the advantages accruing to this form of business ownership should also be pointed out. These advantages are rather well illustrated in the history of the Frank Company, which has been operated for more than 250 years as a family business and has provided employment for many generations of the Frank family. The family has achieved wide recognition through the accomplishments of this concern. It has provided the industry with leading craftsmen, and the family has become relatively wealthy from the profits of the company. The members have taken great pride in building up this business, which has a reputation for high quality and efficient service, and in perpetuating the business under the family name.

Another example of a successful family business is a rather recently organized one. One of the line vice-presidents of a large, nationally known company resigned his position and started his own business. He contended that his position in the large corporation gave him little individual freedom or opportunity to use his own initiative. His ideas were appropriated by others, and his ability was used along specialized lines. The company decisions were always made by a group. His salary, although relatively large, provided him little opportunity to build up an estate and to provide for his children. A large portion of his income was paid to the government in income taxes and for high living expenses occasioned by his executive position.

This individual felt that operating his own small business gave him unlimited opportunity to use his initiative and to reap the benefits of his creative ideas, his longer hours of work, and his outstanding business ability. To this dynamic individual, the operation of his own firm presented a challenge. It gave him prestige and the opportunity to see the fruits of his own efforts. He also appreciated being the "boss." He enjoyed the freedom in planning his own course of action—arranging his vacation and planning his leisure time—and in seeing his own name in bright lights over the small manufacturing plant.

The family business has provided many young people with the opportunity for employment in an organization where there is a personal interest in their progress and where the executive of the company is familiar with their qualities and is anxious to assist them. It gives to many people a chance to start out in a business that has been tried and found successful, and in which the difficult problems of organizing and starting, and building up working capital and a technical staff of skilled workmen have been worked out. The small family business also gives to the manager, as well as to the workers, a chance to become familiar with a wide variety of activities and to observe the entire operation of a business. It is for this reason that many large businesses have looked to the smaller concerns when selecting executives with a well-rounded knowledge of finance, production, and sales, as well as an appreciation for human relations, research, and the other staff functions.

It is fortunate for the future of the small family business that there are certain advantages which help to offset the deep-rooted problems encountered when families attempt to work together in business endeavors. Otherwise, society would be deprived of the acknowledged contribution that the small family-controlled business has made. Emphasis should now be centered on finding adequate solutions to the problems inherent in this type of business ownership.



TECHNOLOGICAL HORIZONS

SCIENTIFIC RESOURCES IN THE SIXTIES

by Bert E. Elwert

THE NATIONAL Science Foundation recently released a major policy document in which, among other recommendations,[1] it calls for the following increases in our scientific resources:

> Twice as many qualified scientists by 1970 as we have now.
>
> An increase in funds spent on science and engineering education from $2.1 billion (1961) to $5.5 billion (1970).
>
> A rise from $.9 billion (1961) to $2.7 billion (1970) in the amounts spent on basic research in colleges and universities.

On the day the statement containing these proposals was made public, it received strong support from President Kennedy and other national leaders.

[1] Much of the material in this feature is based upon information from the following reports: *Investing in Scientific Progress* (National Science Foundation, Washington, D.C., 1961) and *Scientific Progress, the Universities and the Federal Government* (statement by the President's Science Advisory Committee, November 18, 1960).

Mr. Elwert is Assistant Research Editor, Business Horizons.

The report, entitled *Investing in Scientific Progress,* is an unpretentious document; into it, however, is compressed some vital and timely information about our scientific resources and potential. While limitations of space inevitably lead to some sketchy treatment, *Investing in Scientific Progress* analyzes trends in science education over the past forty years and projects these trends to 1970. As stated in the report, our major goal must be to see that "every young person who shows the desire and the capacity to become a scientist" is given "the opportunity to do so." It is carefully pointed out that nothing in the document should be construed as an attempt to turn our national efforts solely toward scientific advances; the goal that the report sets up is not to be achieved by depriving other professions of the leadership required for their own increasing needs.

BASIC RESEARCH

In choosing to emphasize basic research and education, the National Science Foundation stresses the very bases of all science and technology. Education provides the supply of human talent and research the fund of knowledge that, in combination, underlie the whole superstructure of technology. Basic research, in fact, constitutes the raw materials for technology and invention.

Pure vs. Applied

Because understanding for its own sake rather than practical results is the first intention of all basic research, many laymen regard this kind of research as entirely abstract and theoretical. That this is a mistaken notion is becoming increasingly clear. One of the most striking facts of our present state of science and technology is that it is now much harder to draw the line between pure science and technology. New and extremely important applications are growing out of what, a short time ago, was regarded as the most abstruse and "pure" pursuit of knowledge; consider, for example, some of the uses of mathematical theory in computer design and in the analyses of complex biological and social systems. Conversely, advances in technology bring up new problems in research and also provide new tools to aid the researcher. Once the techniques and equipment for radar were developed as part of weapons technology, both the physicist and the chemist had a new and refined tool for investigating properties of solids and chemical compounds. Extensive use of this tool in basic research paid additional dividends in that it opened up the way to entirely new techniques in electronics. Probably the best way to distinguish between basic research and applied science—if there is need to do so—is to examine motive rather than method, though even

here the distinction is not an exact one. In the main, this lack of precise separation is a good thing. Much of a science community's strength stems from a close association between basic science and technology.

SCIENCE PERSONNEL

The National Science Foundation describes the college and graduate training of scientists and engineers (and the research that is an integral part of that education) as "the keystone of scientific progress." Science is defined as including mathematics, the physical and engineering sciences, the life sciences, and the social sciences with the exception of history; classed as professional scientists and engineers are those persons who hold at least a bachelor's degree or its equivalent in science or engineering, and who are professionally engaged in work or study that requires this education. A balanced national effort in scientific research and education demands many kinds of skills and people with differing types and levels of education. Much emphasis, however, is necessarily placed on the doctorate, the Doctor of Science (Sc.D.) or Doctor of Philosophy (Ph.D.), held by most senior educators and principal research people in the colleges and universities.

A subject as complex as the current state of science and technology in an advanced industrial nation is difficult to summarize. If we have to try to capture the essentials of U.S. science in a few words, it would probably be most appropriate to say that it is highly diversified, constantly improving, but less than adequate in terms of the nation's future needs. We should also add the obvious fact that our position as world leader in technology is being challenged as never before in our history.

TABLE 1

Major Professional Activity of Scientists, Engineers, Teachers

In basic research	70,000*
In colleges and universities	45,000
In other sectors	25,000
In science and engineering education	260,000*
In colleges and universities	100,000
In secondary schools	160,000
All other work	1,070,000
Total scientists, engineers, and teachers of science	**1,400,000**

* Note: Many people working in science divide their time between activities (for example, teaching and research), making it impossible to show relative amounts of effort simply by counting the number of people in each activity. In order to take this into account, relative efforts are expressed in terms of full-time equivalent man power. In these terms, the 70,000 people in basic research are equivalent to 45,000 in colleges and universities and 25,000 in other sectors.

At present, there are 1,400,000 scientists, engineers, and teachers of science in the United States. Of this total 87,000 hold doctor's degrees, while the majority (1,070,000) are in work other than basic research and education (see Table 1 for the complete breakdown of our scientific personnel according to their main activities).

New Graduates

Each year, of course, our supply of science skills is supplemented by new graduates. This year our colleges and universities are awarding about 150,000 degrees in science and engineering, of which about 6,900 are doctorates. The total cost of this education at college and graduate levels in fiscal 1961 is $2.1 billion. At first glance these figures seem impressive enough, but weighed against the needs of an expanding population, a growing economy, and a virtual explosion in scientific development, it is obvious that we need to educate more people.

While all levels of education from the bachelor's degree to the doctorate add to our science potential, the key degree is the doctorate. This is no reflection of snobbishness or of excessive concern with formality; the level of modern scientific attainment is now so high that the years of graduate work required for a doctorate are almost a prerequisite to comprehending and perhaps adding to this knowledge. The vital work being done at the outposts of science—the work that supports all science and technology—is, in our time, the domain of those who have completed the highest level of graduate education. There will probably always be a place, even in the most advanced work, for a few exceptional people who do not have the doctorate, but these cases are already the exceptions that prove a rule.

Our attention centers, then, on the 6,900 doctorates awarded this year. How adequate will this number be? What about next year and the year after that? Estimates vary, of course, but it is agreed that we must increase the number in each year of the sixties. Already there are ominous signs that our needs are straining our resources. As Table 1 shows, the bulk of our scientific talent is being absorbed in work other than basic research and education. This applies to the Ph.D.'s

and Sc.D.'s as well as to graduates who terminate their formal education at the bachelor's or master's level.

Teaching Needs

One of the pressure points on our resources of scientific personnel is showing up in the most critical educational area. Total college enrollments will nearly double during the 1960's, but faculties will rise by only about 50 per cent. This is even more serious for science and engineering instruction, because the somewhat higher loss of faculty members to research reduces the effective expansion to well below 50 per cent.

Although the shortage of college science teachers is not near a danger point, there are signs that the situation is deteriorating. An increasing number of science faculty vacancies are being filled by people without doctorates. Recent statistics show that between 1953 and 1960 the percentage of such openings filled by people with doctorates slipped from 53 to 47. Moreover, this happened despite an increase in the number of doctorates awarded during the same period. Part of the problem is that each year more of the new holders of doctorates bypass the colleges and go into industry. Figures compiled by the National Education Association show that in 1959 and 1960 college teaching claimed only 26.5 per cent of the people receiving doctorates in physics; in chemistry the proportion was even lower—only 19.3 per cent of the new Ph.D.'s and Sc.D.'s decided to teach.

This year about 100,000 professional scientists and engineers are teaching about 645,000 science and engineering students in colleges and universities. The National Science Foundation estimates that by 1970 there will be 1,130,000 students enrolled in these fields. If the present ratio of students to teachers is to be maintained, we will need 175,000 fully accredited teachers by 1970. In addition, the staff to assist the teachers will have to rise from 100,000 to 175,000.

There is always some hope that improvements in teaching methods and techniques will ease the demands on teaching time. Certainly we must explore all promising possibilities in this direction. However, the rapid gains in the amount and complexity of scientific knowledge will probably necessitate increased personal contact between student and teacher in the future.

TABLE 2

Investment in College and University Education in Science and Engineering
(in millions of dollars)

	1961	1970 (required)
Salaries		
Full-time equivalent professional staff	$ 800	$2,100
Full-time equivalent assisting staff	425	1,100
Operating and overhead expenses	648	1,700
Information	36	90
Equipment	80	200
Facilities (buildings and physical plant)	150	350
Total	**$2,139**	**$5,540**
Rounded total (in billions of dollars)	**$2.1**	**$5.5**

COSTS OF EXPANSION

The price tag on this expansion of our science teaching will, by 1970, be about three times what we are currently spending. On the basis of the figures for increased professional staff shown above, the National Science Foundation estimates that the total cost will be about $5.5 billion, an increase of $3.4 billion over 1961 (see Table 2 for a comparative breakdown of investment between 1961 and 1970).

In considering these costs, two facts are of paramount importance. First, part of our nation's eminence as a world power rests squarely on our technical achievements and scientific potential. This dependence in no way means that science is the cornerstone of our culture or that our greatness is based on materialism; the quality of our culture and its ability to survive are based on social, spiritual, and artistic values. But it is clear that a great scientific potential is essential to the greatness of a nation. The second fact is that funds spent on education, in this case science education, are an investment in the fullest sense of the word. From this investment we can expect handsome returns in technical improvement and in advances in the biological and social sciences.

Though, in higher education, especially in the sciences, teaching and research are two sides of the same coin, these activities need their own financing and man power. Our federal government is by far the major sponsor of basic research in the United States; no other agency comes close to its contribution of 60 per cent of all research expenditures. The reasons for this are the government's two general responsibilities with regard to science: First, it must be concerned with the development of those fields of

basic and applied science that may be important to the national security and the general welfare; second, the government has a vital interest in the strength of American science and education as a whole.

College Research

About 50 per cent of the basic research performed in the U. S. is done in the colleges and universities. This reflects a trend to rapid expansion of research done on the campus. While some problems and growing pains have accompanied the trend, the impressive results far outweigh the drawbacks. The extent of the trend is perhaps best illustrated by statistics showing growth in college and university research expenditures over the past two decades. In 1940 the federal government spent $15 million on grants to U.S. colleges and universities. In just sixteen years, this figure increased twentyfold to $310 million, and by the end of fiscal 1961 the $310 million had almost tripled again to reach $879 million. None of these totals includes the estimated $60 million in additional money for buildings to house some of this research. Admittedly, this remarkable growth has to be discounted somewhat by the fact that the post-World War II figures are inflated by the government's underwriting of vast off-campus research centers that universities operate and manage. The staffs at these centers are almost exclusively full-time research people; only a small number of teaching faculty members are involved in the work. But even excluding these special installations, spending for campus research has reached impressive totals. In fiscal 1961 the amount was $489 million, compared with $172 million just five years earlier.

Among government branches, the National Institutes of Health —medical research arm of the Department of Health, Education, and Welfare—allocates the largest amounts to college and university research. Grants for research on cancer, heart disease, and a number of other diseases came to $157 million in the 1961 fiscal year, an increase of $127 million over the past five years. The military branches came a close second with expenditures of $154 million last year. In third place was the National Science Foundation, followed by the Atomic Energy Commission, the Department of Agriculture, and the National Aeronautics and Space Administration.

All plans currently under way call for more research at colleges and universities. It is a safe guess, for instance, that we are due for a significant acceleration in the work being done for the National Aeronautics and Space Adminis-



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tration. At the same time, business corporations are increasing their financing of college and university research at a pace about equal to that of the government. Although the $50 million annual contribution from private business looks small compared with government figures, it is a good deal higher than it was a few years ago. Another $50 million annually comes from private foundations, which are also rapidly adding to their budgets for campus research grants. Finally, the universities themselves are major contributors to their own research. Last year an estimated $150 million from university budgets went into research work.

It is important to keep these figures in perspective. Bear in mind that we are discussing basic research—not all of the diverse activities that are labeled as research—and that we are considering only that part of it performed by colleges and universities. The amounts spent for all the activities that come under the heading general research are much higher than anything we have discussed here. In the year ended June 30, a total of $16 billion was spent on a host of activities, all of them generally defined as research. Only 8 per cent of this total went into university programs; but the university portion included fully one-half of the $1.8 billion spent in the critical area of basic research. The other half was divided among private industry, $0.5 million; federal government, $0.3 million; and nonprofit institutions, $0.1 million (see Table 3 for a concise picture of the all-important basic research segment based on sources and uses of funds). This $1.8 billion spent on basic research in 1961 was broken down into: $1.5 billion for salaries, indirect costs, and other expenses; and $0.3 billion for facilities, equipment, and information costs.

TABLE 3

Percentage Distribution of Funds for Basic Research, Fiscal Year 1961

Sector	Source of Funds	Research Performed
Colleges and universities	12%	50%
Other nonprofit institutions	6	7
Private industry	22	25
Federal government	60	18
Total	**100**	**100**

According to the National Science Foundation estimates, basic research done in colleges and universities will have to grow to three times its present level by 1970 (measured by dollar amounts invested in research). This means that the 45,000 full-time equivalent personnel engaged in basic research will have to grow to 85,000 by 1970 and that nonprofessional supporting personnel (machinists, laboratory assistants, and technicians) will have to increase from 35,000 to 65,000. Along with this increase in personnel, there must be a commensurate increase in laboratory equipment, buildings, and library and information services. (This rise in dollar amounts is shown in Table 4.)

RESEARCH GROWTH

What was said about the benefits to be expected from expanded teaching applies equally to growth in research. The returns from basic research have more than paid for the effort in the past and they can be expected to do so again. But, in the meantime, as we intensify our research programs, we will undoubtedly experience stresses and strains in the institutions that carry on the work. Just how serious these problems will be—or already are—is hard to determine. No doubt, some current comments on the dangers of undermining our educational purpose and so on are exaggerated; there seems to be little evidence to support any serious fears that research is drying up instructional facilities or detracting from undergraduate teaching.

However, there are real problems. At some of our finest schools, research work has grown so fast and is now of such large proportions that there is inevitable pressure on facilities. Columbia University, for example, currently handles a research budget of about $22 million, up from only $4 million a decade ago. At Harvard approximately 25 per cent of the operating budget comes from research grants. Other top schools have comparable research budgets. It would be foolish to say that this trend holds no dangers. Certainly it is possible that too many of our ablest people will succumb so completely to the lure of research that they will abandon teaching. On the other hand, research and teaching together produce an ideal educational environment; the problem is more likely to be one of balance and perspective than of fundamental conflict.

A more plentiful supply of teachers, research personnel, and

facilities would help to ease the necessary adjustments. This, of course, is the basic intent behind the National Science Foundation recommendations, but it is a goal that requires time to accomplish. A more immediate assist could be had through a wider distribution of research funds. Over 60 per cent of the Federal research money dispensed in 1960 went to twenty-five of the nation's leading universities, and an overwhelming proportion of research support is channeled to the 165 universities that award doctorates. It could be that research and teaching could be better combined if some carefully selected work was shifted to schools currently receiving less research support than they can absorb. There should also be some opportunities for increasing research grants to smaller schools. In these times we can ill afford to let any of our human resources or material facilities be overlooked.

TABLE 4

Investment in Basic Research in Colleges and Universities

(in millions of dollars)

	1961	1970
Salaries		
Full-time equivalent professional staff	$345	$970
Full-time equivalent assisting staff	158	450
Operating and overhead expenses	227	665
Information	33	95
Equipment	30	180
Facilities (buildings and physical plant)	85	360
Actual total	**$878**	**$2,720**
Rounded total (in billions of dollars)	**$0.9**	**$2.7**

It is a sad fact that the benefits of scientific achievements are often adulterated by less worthy elements. Now science and technology are instruments of national policy. As the Soviet Union has shown, scientific advances—especially if they can be turned into spectacular feats—make a potent propaganda weapon, and can be used to back up the saber rattling directed against those who oppose Soviet policy.

These developments make it easy to be discouraged. But we in the West, if we can expand our scientific potential and simultaneously nourish a great culture, may yet fully realize the high potential of science. We need armaments because we must survive but, given unified national effort, we may develop peaceful uses for our knowledge that will dwarf the awesome capabilities of our weapons. If we bend our efforts to the task, we may, in the words of our President in his inaugural address, ". . . explore the stars, conquer the deserts, eradicate disease, tap the ocean depths, and encourage the arts and commerce."

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Lois Shepherd Headings
EDITOR

book notes and reviews

Such moments when Mind and Matter hold perfect communion, And wide vistas open to regions hitherto entirely barred. (Lu Chi)

Only he who has measured the dominion of force, and knows how to transcend it, is capable of love and justice. (Simone Weil)

FUSION: PRO OR CON?

SOME TIME ago we read an article that has haunted us ever since and is mainly responsible for the books chosen for review in this issue. The article was called "The Creative Process" and was written by J. Bronowski for *Scientific American* (September, 1958). In it Bronowski shows with unusual insight the essential similarity between genuine artistic and scientific creation; he sees the same process at work in Copernicus and Shakespeare. This is so, he says, because, whether artist or scientist, a man becomes creative when he finds a new unity in the variety of nature, a unity that gives him a sense of both richness and understanding. Moreover, he maintains that scientific creation is as personal as artistic creation: the theory in science that the choice between alternatives is made mechanically in favor of the simplest is a "verbal deception," for we cannot define simplicity or even say what we mean by the simpler of two inductions. As an example he gives Max Planck's quantum theory. "The facts showed that the radiation is not continuous; they did not show that the only alternative is Planck's hail of quanta. This is an analogy which imagination and history brought into Planck's mind." (p. 64) He then sees the same imaginative incisiveness and understanding crowded into William Blake's metaphor, "A dog starv'd at his Master's gate/Predicts the ruin of the State." The thought that the moral detail is indicative of the larger morality of the society, Bronowski continues, is so expressed as to transmit an excitement that is a valid measure of creative genius.

We were struck, too, by his pointing out that the great creative periods in literature and the arts have coincided with the great creative periods in science. "Is it a coincidence that Phidias and the Greek dramatists lived in the time of Socrates?" he asks. "Is it a coincidence that Galileo shared the patronage of the Venetian republic with sculptors and painters? Is it a coincidence that, when Galileo was at the height of his intellectual power, there were published in England in the span of 12 years the follow-

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ing three works: the Authorized Version of the Bible, the First Folio of Shakespeare and the first table of logarithms?" (p. 60) In addition, Bronowski sees each concurrent flourishing as a reflection of an age of action. We might insert here that these ages were also famous for outstanding personalities in a variety of practical fields. They certainly were not timid ages given to abstract speculation.

It is true that history does not repeat itself in any specifically recognizable fashion, but certain analogies can profitably be drawn. We were reminded of this by the continuing efforts to re-establish communication between what **C. P. Snow** has symbolized as "the two cultures." Snow, too, feels that breaking down this polarization is important to the health and advancement of our civilization. And since Snow is not one to underestimate the importance of the practical in the progress of men's affairs, he must be strongly convinced of the interrelations. In fact, the interaction of scientists in the practical world of government is the subject of Snow's new book SCIENCE AND GOVERNMENT (Harvard, $2.50).

Originally (prompted by the review in *The Economist)* we had intended to discuss *Science and Government* solely as an administration essay. For one thing, it is an excellent study of high-level administration in action told as only a competent novelist could tell it. But more to the point here, Snow is in a way a modern version of the Renaissance man. As well as being the acclaimed author of a prodigious series of novels called collectively *Strangers and Brothers* (an intriguing title in itself), he has also been a practicing scientist and administrator. He started his professional life as a physicist, was a fellow of Christ's College, Cambridge from 1930 to 1950, was in charge of selecting scientific personnel for war research in Britain during World War II, was a Civil Service Commissioner from then until 1960, and has been a director of the English Electric Company since 1947. For this reason we want to connect this book later with his now-famous Rede Lecture on *The Two Cultures and the Scientific Revolution.*

Science and Government begins with Snow's story of the varying fortunes of two scientific advisers to the British government during World War II, Sir Henry Tizard and F. A. Lindemann (Lord Cherwell). Snow's hero is Tizard, the proponent of radar, and his villain, Lindemann, Churchill's close adviser and the bitter enemy of Tizard. Lately, the truth about the feud between these two scientists has become a matter of considerable controversy, with pros and cons filling several volumes. But the story given here is sufficient for its purpose: to show how scientists can serve in government with the greatest effect and the least risk.

In the first place, Snow deplores two phenomena evident in the scientific-military advisory setup in which Tizard and Lindemann participated: One was the secrecy under which cardinal choices had to be made by a handful of men (he calls this the "euphoria of secrecy"); the other was the general bad judgment of those who became overinvolved in gadgets (the "euphoria of gadgetry," in which "gadget" can be any practical device from an egg beater to a neutron bomb). On the evidence of the first evil, he concludes that no single scientist should have the powers of choice that Lindemann had, that the only curative for ill-judged scientific choices is referral to a larger group of professional scientists. Of the evidence of the second, he says bluntly, ". . . anyone who is drunk with gadgets is a menace." (p. 69) He is firmly convinced from his scientific training that societies at about the same level of technology will produce similar inventions, and to put too much dependence on any one device is fatuous. He adds that in the case of the military technology of the United States and the USSR, for example, ". . . it would be astonishing if either society kept for long anything like a serious, much less a decisive, technical lead." (p. 70) He would, then, advise as wide a consensus as possible among the best scientific minds before policy is set.

As for scientists in other areas of government, Snow sees a definite need for "scientists proper" in all the levels of government—chiefly because he feels that they "have the future in their bones" and can afford the socially imaginative foresight often lacking in active administrators and politicians who must become masters of the short-term solution.

When we referred to *Science and Government* as an essay on administration, we were referring mainly to a second aspect of the essay, an analysis of "closed politics." By this term, Snow means "any kind of politics in which there is no appeal to a larger assembly—larger assembly in the sense of a group of opinion, or an electorate, or on an even bigger scale what we call loosely 'social forces.'" (p. 56) The most obvious fact about such a "closed" situation, he points out, is that personalities and per-

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sonal relations carry a weight of responsibility greatly out of proportion to that which they carry in open politics. In all closed politics he isolates three forms: committee politics, hierarchical politics, and court politics, which "interweave, interact, and shift from one to the other." On committee politics he quotes a description of a meeting of high officials from one of his own novels:

"'These men were fairer, and most of them a great deal abler, than the average: but you heard the same ripples below the words, as when any group of men chose anyone for any job. Put your ear to those meetings and you heard the intricate labyrinthine and unassuageable rapacity, even in the best of men, of the love of power. If you have heard it once—say, in electing the chairman of a tiny dramatic society, it does not matter where—you have heard it in colleges, in bishopries, in ministries, in cabinets: men do not alter because the issues they decide are bigger scale.'" (*The New Men*, pp. 278-79)

The stronger personalities, in other words, tend to carry the day in committees. Later in the book he gives three conditions that he considers imperative for an effective committee in government: (1) the objective must be clear and not too "grandiloquently vast"; (2) the committee has to be correctly placed in the organization—a feat requiring a thorough knowledge of the organization and its interrelationships; and (3) the committee must be empowered to follow up on its advice.[1] By hierarchical politics he means getting things done in chain-of-command organizations such as bureaucracies and large industries, and here he pays due respect to what is generally called the "informal organization." Court politics Snow describes as "attempts to exert power through a man who possesses a concentration of power." (p. 63) His example is the Lindemann and Churchill relationship. Like any true court politician, says Snow, Lindemann held no official position.

"Bold men protested to Churchill about Lindemann's influence, and were shown out of the room. Before long everyone in official England knew that the friendship was unbreakable, and that Lindemann held real power. Before long also men had accustomed themselves to that degree of power and jumped up behind it; for an overwhelming majority of men find a fascination in seeing power confidently used, and are hypnotised by it." (p. 64)

In general, Snow sees closed politics as the way men have to operate in certain circumstances to get things done. He insists that "I mean my description of politics to be taken as neutral statements." (p. 66) He is interested here in understanding "how the world ticks" in order to make it tick better.

It is not difficult to see from these latter remarks (eschewing as they do value judgments) why, despite his being an acclaimed novelist, his heart is really with the scientists when he discusses the gulf separating the men of science from the literary intellectuals in his *The Two Cultures and the Scientific Revolution*. True, he sees the gulf as one that impoverishes both the scientist and the man in the humanities, and believes that as long as it exists, no society can think with wisdom.

To get a more committed view from the side of the humanities, we turned to a recent book (a collection of essays reworked from previous addresses and papers) by a man who has spent considerable energy trying to get the fine arts more integrally placed in the educational system. "This book," says **Herbert Read**

[1] We are reminded of the tragic fate of advisory committee reports in the U.S.—a fate so well described in Edward T. Chase's article "The Longest Way From Thought to Action" in *The Reporter* (June 22, 1961). Chase quotes Fred Hechinger's "'Committee reports fulfill much the same purpose on the contemporary scene as the chorus did in Greek drama: to give warning of vague trials ahead without being so specific as to interfere with the immediate business of the actors or to kill the suspense of the audience.'" (p. 28)

He tells the tale of a transportation study, originally done 26 years ago, repeated at intervals with the same findings, since substantiated by the growing urban traffic snarls—but still not acted upon. He cites the famous Gaither Report on American security (succeeded by, among others, the Rockefeller Brothers' reports), the 5-volume Paley Report on the nation's material resources (killed by the mining industry interests but enjoying tremendous prestige and use by governments abroad and to be succeeded by *Resources in America's Future* in 1962), the Hoover Reports on reorganization of the Executive branch (also repeated by later reports, equally ignored), as well as the Randall Report on foreign economic policy, the Bassett Report on modernizing aviation facilities, the Kestnbaum Report on intergovernmental relations, the Cooke Report on water resources, the Sarnoff Report on manpower utilization in the armed services, the Eckstein-Fromm Report on steel pricing, the Conant Report on education, the Bane Report on the need for more doctors, and on and on. "It is clear that we are the victims of an epidemic of repetitious research reports; that these reports have more often than not been commissioned to substitute for action rather than to accomplish it; and finally, that the original reports, the good ones, are almost never acted upon or are acted upon after the trouble they have pointed to has engulfed us." (p. 30)

Chase calls this state of affairs wasteful and even suicidal, as it indeed is. Snow would suggest, of course, that the trouble lies in divorcing the advice from power to follow it up—a sticky suggestion for a society in which the professor or scientist is suspect in any realm of action, despite the fact that more likely than not he has long since cut his political teeth right in his own university. He might be a bit thin-skinned under unusual pressures, but he has his own peculiar strengths as well as weaknesses. One such strength would be a healthier respect for the value of such reports.

in the preface to his THE FORMS OF THINGS UNKNOWN (Horizon, $6.00), "is concerned with the nature of the creative mind and with the part it plays in the maintenance of those values that in the past have been inseparable from the idea of a civilization." (p. 11) He goes on to say that he feels these values are threatened by the technological revolution, which has been accompanied by the rise of a scientific philosophy in harmony with it. In his first chapter, "The Limitations of a Scientific Philosophy," he uses Reichenbach, especially, as his straw man and cautions that "I hope these remarks will not be taken as an attack on science—I am attacking only the pretensions of science: its pretension to be the only sufficient basis of philosophy, or to be identical with Reason itself." (p. 29)

Read's main argument is that art is as factual as science—that far from being an "emotive expression" as Reichenbach describes it, it is, in Otto Baensch's words, "'a mental activity whereby we bring certain contents of the world into the realm of objectively valid cognition; . . . it is the particular office of art to do this with the world's emotional content. According to this view, therefore, the function of art is not to give the percipient any kind of pleasure, however noble, but to acquaint him with something which he has not known before.'" (p. 21) When Read insists that art is objective, he distinguishes between the *created* object of art and the *given* object of science. The created object is the objective correlative of an emotion, a mood, an idea, or an intuition; it is "the realization of a state of consciousness." (p. 26) Read would maintain, therefore, that the artist is the true empiricist and that science is constructed of speculation built from artificial sign-and-logic systems. Whereas the scientist holds that truth is a predicate of statements, the artist (a conscious or unconscious existentialist) says that truth is a predicate of the creation of specific symbolic objects.

> "The artist knows that his sense organs are quite incapable of encompassing empirically any external reality; but he knows that he is a part of the universal process, a biological entity engaged in the adventure of existence; and by knowing this, by becoming aware of the growing-point that he is in this universal process, he is able to manufacture some grains of the real—just as the photogenic cells of a plant manufacture certain real substances from the air or the ether or the cosmic rays. The two processes are analogous rather than identical, but the work of art is real in the sense that an atom of nitrogen is real." (p. 27)

He also refers to Max Scheler's formulation of this idea: The history of art is a series of expeditions against the intuitable world in order to subdue it for our comprehension. (T. S. Eliot calls each such venture "a raid on the inarticulate.") Art, in short, is the attempt to objectify reality in a way that bypasses our cultural confines, to draw as true a picture of the perceiving process and the perceived object as possible, to stretch the *ways* of seeing and understanding. The awareness of and response to such new ways of seeing Read calls the aesthetic sensibility, which he believes is the spring of creativity for science as well as art, but which is in danger of extinction from "scientism," or the idolization of the logical mode of inquiry. What is the difference, asks Read, between the logical status of works of art such as a Greek vase and the materials the biologist examines under a microscope? Both are material organizations exhibiting order, and,

> ". . . if the scientist asserts that the order he discovers in nature is not *meant* to give pleasure, whereas the potter who created the vase had the intention to give pleasure—then I would reply in the first place that the scientist by his own confession does not know whether an intention is present in the order of the universe; and that the intention of the potter was not to give pleasure, but to make a vase that corresponded to his instinct for order. Fundamentally—and I apologize for insisting on what may seem to be a subtle point but which is really the essence of the whole question—fundamentally there is no possibility of making a distinction between science and art in terms of valuation. The work of art is just as much or just as little an empirical fact as the structure of a molecule of carbon; the empirical facts of science are just as much a question of choice, or of chance, or of inspiration, as a work of art. I refuse absolutely to surrender the empirical status of the work of art." (p. 31)

In his first chapter, therefore, Read was concerned with the art object and its nature, especially as compared with the scientific object. In his second chapter he talks of art as a symbolic language—in other words, of art's unique method of communication. Starting with the statement of an eminent English biologist (J. Z. Young) that "'Man is primarily a communicating animal'" (p. 33), Read notes that man has employed a variety of systems for communication: spoken or written signs, gestures, nonlinguistic sounds (music), and visual images. These he would further simplify into two competing systems: one based on *sound*, the other on *sight*. For his discussion of the latter system, he adopts Suzanne Langer's distinction between symbol and sign: a symbol lets us conceive its object and the sign causes us to deal with what it

means.[2] He adds C. F. von Weizsäcker's definition of a symbol: "'A sign which cannot be made superfluous simply by pointing to the object [signified], we shall call a symbol.'" (p. 36) Read agrees also with Langer's description of perceptual thinking as a process of symbolic transformation, which she calls symbolic discourse. Conceptual thought so dominates our society, says Read, that other forms of discourse are largely ignored despite evidence that thought has not always been linguistic. In the earliest stages of writing, for example, meaning was expressed by visual signs that did not correspond to linguistic signs. Further, today perceptual thinking or perceptual experience has too often been confused with "feeling." Read maintains, however, that it is truly a cognitive activity and cites Conrad Fiedler's statement that an artist "'becomes an artist by virtue of his ability to rise above his sensations.'" (p. 40) The tendency to transform perceptual experience into feeling, on the contrary, keeps perceptual abilities at a low level of development. Again he emphasizes that keeping cognition at the stage of perception rather than moving to a stage of abstraction or conceptualization means keeping open other roads that also arrive at cognition.

In our zeal to improve and perfect only linguistic modes of communication and their concomitant logical systems of knowledge, "Education is regarded almost exclusively as a system for developing a capacity for forming concepts, and any idea that education should devote at least as much attention to developing a capacity for concrete perceiving has hardly ever occurred to those who formulate and direct our educational ideals." (pp. 43-44) Although we have counted our great artists among the most enlightening spirits of history, we deny the faculties by which they became great artists. In our education and in our social estimation of capabilities, we deny recognition of the fruits of perceptual experience in ordinary people. What is more, with the decline of handicrafts, people have become divorced from perceptual effort and there remains no counterpoise to abstract conceptual thought in our way of living. "A whole method of communication, the language of non-vocal signs, has been thoughtlessly jettisoned by modern society." (p. 46)[3] Some of the shrillness of modern art, he continues, is due to this alienation. "The artist has to adopt shock-tactics, in an attempt to reawaken the visual responses of an apathetic public. He is trying to communicate by visual signs with people who are blind." (p. 46)

Although in some ways the most difficult part of Read's book, his explication of the psychology and physiology of the creative process (chapter 3) would seem most logical to the conceptually

[2] Suzanne K. Langer, *Philosophy in a New Key: A Study in the Symbolism of Reason, Rite, and Art* (Penguin, 1942).

[3] Advertisers and public relations men, as Read notes, are among the few moderns aware of this language, but their purpose admittedly is practical, not pure. Commercial television and bad art are as abominable to the artist as exorbitant costs and taxes are to the businessman: both are a waste or misuse of a precious resource—perceptual attention in the first case and money in the second.

FOR THE BUSINESS EXECUTIVE

RECENT

Harold Bierman, Jr., L. E. Fouraker, and R. K. Jaedicke, QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS (Irwin)

James Black, DEVELOPING COMPETENT SUBORDINATES (A.M.A.)

W. B. D. Brown, EXPLORATIONS IN MANAGEMENT (study by Britain's Glacier Metal Co.; Wiley)

Pres. Commission on Money and Credit, MONEY AND CREDIT: THEIR INFLUENCE ON JOBS, PRICES, AND GROWTH (Prentice)

F. DeArmond, GUIDE TO PERSONAL SUCCESS IN MANAGEMENT (Prentice)

R. S. Edwards and Harry Townsend (eds.), STUDIES IN BUSINESS ORGANIZATION (St. Martin's)

William W. Haynes and *Joseph L. Massie,* MANAGEMENT: ANALYSIS, CONCEPTS, AND CASES (Prentice)

INDUSTRIAL RELATIONS FORUM (A.M.A.)

Klaus Knorr and W. J. Baumol (eds.), WHAT PRICE ECONOMIC GROWTH? (Prentice)

T. Mahoney, T. H. Jendee, and A. N. Nash, THE IDENTIFICATION OF MANAGEMENT POTENTIAL: A RESEARCH APPROACH TO MANAGEMENT DEVELOPMENT (W. C. Brown, Dubuque, Ia.)

Floyd C. Mann and Franklin W. Neff, MANAGING MAJOR CHANGE IN ORGANIZATIONS (Found. for Res. on Human Behavior, Ann Arbor, Michigan)

E. W. Martin, Jr., ELECTRONIC DATA PROCESSING (Irwin)

ADMINISTRATION OF ELECTRONIC DATA PROCESSING (Nat'l Indus. Conf. B'd)

Powell Niland, MANAGEMENT PROBLEMS IN THE ACQUISITION OF SPECIAL AUTOMATIC EQUIPMENT (Grad. Sch. of Bus. Admin.; Harvard)

A. R. Oxenfeldt, PRICING FOR MARKETING EXECUTIVES (Wadsworth)

oriented. Quite unusual is his explanation of C. G. Jung's frequently misinterpreted *archetypes* in purely physiological and materialistic terms. Read explains them as neural circuitry or neural patterns of negative feedback, genetically developed through man's long evolutionary history. The archetypes are engrams firmly rooted in the physiological structure of the brain. The brain has evolved, as Read interprets Jung, through vast stretches of time, and as it has grown in size and complexity, it is reasonable to assume "that the profoundest social experiences of mankind must have left some physiological trace in the structure of the brain; and in particular that some of the earliest experiences of the species, long forgotten in the comparative security of historical times, left the deepest traces." (p. 54)[4] They are referred to as "typical forms of apprehension" or "regularly recurring ways of apprehension." It is just this kind of reinforced feedback that Jung means by "racial unconscious."

Read then refers again to Suzanne Langer's study of symbolic forms. Langer observes that sense experience is a matter of organization by forms—that the eye and ear organize raw sense data in some manner of patterning for imprint on the cortex. These imprints are then reinforced and associated to make meanings. Abstraction is built up of repeated experiences of analogous occurrences, and abstraction varies in degree from inarticulated symbols to the language of mathematics. But meaning, Langer insists, cannot exist apart from pattern or form.

We have remarked before—particularly in connection with the review of Peter Drucker's *Landmarks of Tomorrow*[5]—on the amount of attention being paid to the concept of pattern, meaning nonmechanical form (in this sense, sometimes probability is considered a pattern as opposed to the unvarying regularity of cause and effect). The attention was partly in response to the development of indeterminacy and the increased research in the biological sciences. This concept of pattern Read calls aesthetic and ties to man's natural process of perceiving. He refers to a scientific symposium on the problem of form in science edited by Lancelot Law White and entitled *Aspects of Form*. In an earlier book of his, *Accent on Form* (reviewed in *Business Horizons*, Summer, 1959), White says "For all intellectual processes depend on the operation of the aesthetic sense which recognizes an elegant ordering when one is presented to it." (p. 59)[6] It is thus that Read can maintain art is not personal in the sense that it is a projection of the artist's own unconscious or even his own intellect, but is a crystallization of instincts. The artist is merely a medium or channel with the especial ability to give appropriate form to per-

[4] In Marshall Sahlins' recent research on the behavior of apes, he was able to isolate three basic fears (evidently deriving from their sleeping in trees at night): fear of falling, fear of the dark, and fear of snakes. The reported reenactment of these fears in human dreams does make one wonder.

[5] We must mention in passing that one of the soundest articles on U.S.-Latin America relations that we have read is Drucker's "A Plan for Revolution in Latin America" in the July, 1961 issue of *Harper's Magazine*.

[6] This is certainly reminiscent of Bronowski's article mentioned at the start of this review.

Sylvia Porter, HOW TO GET MORE FOR YOUR MONEY (World)

Clarence B. Randall, THE FOLKLORE OF MANAGEMENT (Little, Brown)

Albert N. Schrieber, DEFENSE PROCUREMENT AND SMALL BUSINESS (Univ. of Wash.)

Robert Tannenbaum and others, LEADERSHIP AND ORGANIZATION: A BEHAVIORAL SCIENCE APPROACH (McGraw)

Lester Tanzer (ed.), THE KENNEDY CIRCLE (Kiplinger Book Club Selection; Robert B. Luce, Inc.)

Lester Thonssen and W. L. Finkel (eds.), IDEAS THAT MATTER: A SOURCEBOOK FOR SPEAKERS (Ronald)

FORTHCOMING

Darrell Huff, SCORE: THE STRATEGY OF TAKING TESTS (author of *How to Lie with Statistics;* Appleton)

Grant Jeffrey, SCIENCE AND TECHNOLOGY STUDIES (Meridian Original)

F. Hodge O'Neal and Jordan Derwin, EXPULSION OR OPPRESSION OF BUSINESS ASSOCIATES: SQUEEZEOUTS IN SMALL ENTERPRISES (Duke)

John Tebbel, THE INHERITORS (fate of great 19th cent. Am. fortunes; Putnam)

EXECUTIVE HEALTH

RECENT

Edmund Bergler, M.D., THE REVOLT OF THE MIDDLE-AGED MAN (Universal)

Fred Kerner, STRESS AND YOUR HEART (Hawthorn)

Irvine H. Page, M.D., and others, STROKES: HOW THEY OCCUR AND WHAT CAN BE DONE ABOUT THEM (Dutton)

Robert Page, HOW TO LICK EXECUTIVE STRESS AND STAY IN TOP EMOTIONAL AND PHYSICAL TRIM (Prentice)

William P. Sheperd, M.D., EXECUTIVES' HEALTH SECRETS (Bobbs-Merrill)

Dr. Herman Taller, CALORIES DON'T COUNT (new theory of dieting; S. & S.)

ceptual experience and symbolic discourse. (It is interesting to note that whereas Bronowski is trying to demonstrate that scientific creation is personal, Read is asserting that artistic creation is impersonal.)

We shall not try to summarize, or even comment, on all of Read's essays in this book; some are too specialized for general interest—especially chapter 5, "Psychoanalysis and the Problem of Aesthetic Value." Chapter 4, "The Created Form," we do, however, want to mention principally because it is the only discussion of twentieth-century art that has made much sense to us. Read uses Picasso's famous "Guernica" and the sculpture of Henry Moore as points of departure. This discussion is continued in slightly different form in chapter 9, "The Scream of Juno's Peacock," and chapter 10, "The Principle of Speculative Volition" (a phrase of Stravinsky's). The nature of poetic consciousness and the creative experience in poetry (illustrated by the history of Coleridge's ode "Dejection") are considered in chapters 7 and 8.

The fourth and last part of Read's book (chapters 11 through 14) focuses on the interrelations between art and society. He offers as a solution for the ills plaguing modern society (the attrition of sensibility due to technological organization and mass amusement, and the destructiveness of modern war) a new humanism, a rejuvenation of the tragic sense of the human situation. The basis of tragedy he explains as a conflict between man's individual ego-consciousness or self-will and predetermined patterns of collective consciousness or social patterns of behavior. He sees man's existence also as a constant conflict between good and

FOR THE BUSINESS SPECIALIST

Walter Adams and Jack J. Preiss (eds.), HUMAN ORGANIZATION RESEARCH (Dorsey)

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R. C. Estall and R. O. Buchanan, INDUSTRIAL ACTIVITY AND ECONOMIC GEOGRAPHY: A STUDY OF THE FORCES BEHIND THE GEOGRAPHICAL LOCATION OF PRODUCTIVE ACTIVITY IN MANUFACTURING INDUSTRY (Humanities Pr.)

William Fellner, EMERGENCE AND CONTENT OF MODERN ECONOMIC ANALYSIS (McGraw)

Dr. Benjamin Fine, TEACHING MACHINES (Bold Face Books)

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Sam Kagel, ANATOMY OF A LABOR ARBITRATION (Bur. of Nat'l Affairs)

Thomas F. Keller, ACCOUNTING FOR CORPORATE INCOME TAXES (Bur. of Bus. Res.; Univ. of Mich.)

Adolph Langsner and H. G. Zollitsch, WAGE AND SALARY ADMINISTRATION (Southwestern Pub.)

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Bernard T. Lewis and W. W. Pearson, MANAGEMENT GUIDE FOR PREVENTIVE MAINTENANCE (Rider)

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F. F. Mauser, MODERN MARKETING MANAGEMENT: AN INTEGRATED APPROACH (McGraw)

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Jean Meynaud (ed.), INTERNATIONAL ORGANIZATIONS IN THE SOCIAL SCIENCES (UNESCO pubs.; Columbia)

Geoffrey Moore (ed.), BUSINESS CYCLE INDICATORS (2 vols.; Nat'l Bur. of Econ. Res.; Princeton)

Wilbert Moore and Arnold S. Feldman (eds.), LABOR COMMITMENT AND SOCIAL CHANGE IN DEVELOPING AREAS (Social Science Research Council)

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Daniel I. Peer, REAL ESTATE PROBLEMS (Greenwich Book Pub.)

Robert N. Rapoport, Rhona Rapoport, and Irving Rosen, COMMUNITY AS DOCTOR: NEW PERSPECTIVES ON A THERAPEUTIC COMMUNITY (Charles C. Thomas)

Richard Ratcliff, REAL ESTATE ANALYSIS (McGraw)

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Harry Stark, INFIRMITIES OF PER CAPITA NATIONAL INCOME ESTIMATES WHEN EMPLOYED TO COMPARE LEVELS OF LIVING BETWEEN DEVELOPED AND RETARDED AREAS (Univ. of Miami)

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Maurice S. Trotta, LABOR ARBITRATION (Simmons-Boardman)

Universities-Nat'l Bur. Com. for Econ. Research, PUBLIC FINANCES (Princeton)

Sidney Weintraub, CLASSICAL KEYNESIANISM: MONETARY THEORY AND THE PRICE LEVEL (Chilton)

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Thomas Wilson, INFLATION (Harvard)

James P. Wood, ADVERTISING AND THE SOUL'S BELLY: REPETITION AND MEMORY IN ADVERTISING (Univ. of Ga.)

E. A. Wrigley, INDUSTRIAL GROWTH AND POPULATION CHANGE (Cambridge)

Ronald Yuzuk, THE ASSESSMENT OF EMPLOYEE MORALE (Bur. of Bus. Res.; Ohio State Univ.)

evil, truth and error, beauty and ugliness. This tragic predicament he calls man's fate, and it is, in the existentialist's term, absurd; there is no redress in heaven for injustice on earth, and the ways of the gods to men are inscrutable. What he needs is a discipline that will help him to learn, through suffering error and the consequences of error, to maintain some balance and achieve some reconciliation with his fate. Such a sense of balance, proportion, and harmony Read refers to as an aesthetic sense. The old idiom for good judgment—a sense of proportion—expresses the same notion. "Do not avoid reality in any way, said Aristotle, but impose measure on it." (p. 186)

Since today, however, man has no means but mass appeals and hysteria to purge his emotions (his suffering) in order that learning can take place, "we must seek equivalent forms [equivalent to Greek tragedy, which served this function for the Greeks] to contain our violence, to make us capable of love and justice." (p. 187) To Read, therefore, the reconciling image is the "flower of peace" (peace for individual and society), which can be reached only through love. Thus he does not believe in imposing order from without by force, but in teaching the way of achieving order within through a cultivation of the aesthetic sense. This is essentially a substitution of art for religion, which he feels cannot do and has not done the job. He agrees with Freud that every religion is a religion of love for those whom it embraces although it practices cruelty and intolerance to those who do not belong to it. Further, like the Greeks he believes that man's primary reconciliation must be to the fact of final death in an irrational universe. For these reasons Read reverts to Greek tragedy and its cathartic purpose. The love that he sees as the reconciling image is Tolstoy's definition of love in a context of force: The man you are commanded to love (Tolstoy was, of course, a Christian) "is not the man for whom you have a passionate partiality; he is not your equal in education or social status. Nor is he the man you admire for his distinction, nor the man you pity for his inferiority—partiality or condescension are feelings of selfishness. The neighbor is every man . . . ." (p. 216) What we should learn to love and respect, in short, is the common humanity in every man. In any business we have with any man, we must remember his need: Tolstoy would say, remember it rather than our own; the Greeks, as well as our own.

In his last chapter, Read switches from the essentially Christian mystical "ordering of the soul" by means of love (Tolstoy, Berdyaev, and Simone Weil) to the practical Greek. The achievement of right-doing to the Greek was a skill attained through the proper kind of education. And education, for the Greek, as Read points out in reference to Plato, was conceived as education for citizenship. From infancy, a child should be conditioned to feel pleasure and pain about the right things.

"Education is a process of conditioning the malleable sensibility and mind of the child to rhythm and metre, to skilful movements which are always graceful movements, to the visible embodiment of perfection in any and every form. For, says Plato, 'excellence of form and content in discourse and of musical expression and rhythm, and grace of form and movement, all depend on goodness of nature . . . so, if our young men are to do their proper work in life, they must follow after

these qualities wherever they may be found. And they are to be found in every sort of craftsmanship, such as painting, weaving, embroidery, architecture, the making of furniture; and also in the human frame and all the works of nature: in all these grace and seemliness may be present or absent. And the absence of grace, rhythm, harmony is nearly allied to baseness of thought and expression and baseness of character; whereas their presence goes with that moral excellence and self-mastery of which they are the embodiment.' All this is clear and precise enough, but Plato continues to emphasize 'the decisive importance of education in poetry and music: rhythm and harmony sink deep into the recesses of the soul and take the strongest hold there, bringing that grace of body and mind which is only to be found in one brought up in the right way.'" (pp. 232-33)

The Greek could see no "artistry" in wickedness but could literally understand "the beauty of holiness", a concept often lost on us.

Read also seconds Plato's contention that a peaceful world is in itself a work of art, "a condition of equilibrium attained by the skilful adjustment of human desires to absolute values, specifically to the values revealed to the senses as harmony. One might say universal values, for these harmonic values are visibly embodied in the order of the Cosmos, in so far as science can reveal that order." (p. 234) He also quotes Shelley's "'The great secret of morals is love; or a giving out of our own nature, and an identification of ourselves with the beautiful which exists in thought, action, or person, not our own. A man to be greatly good, must imagine intensely and comprehensively; he must put himself in the place of another and of many others; the pleasures and pains of his species must become his own.'" (p. 236) And finally,

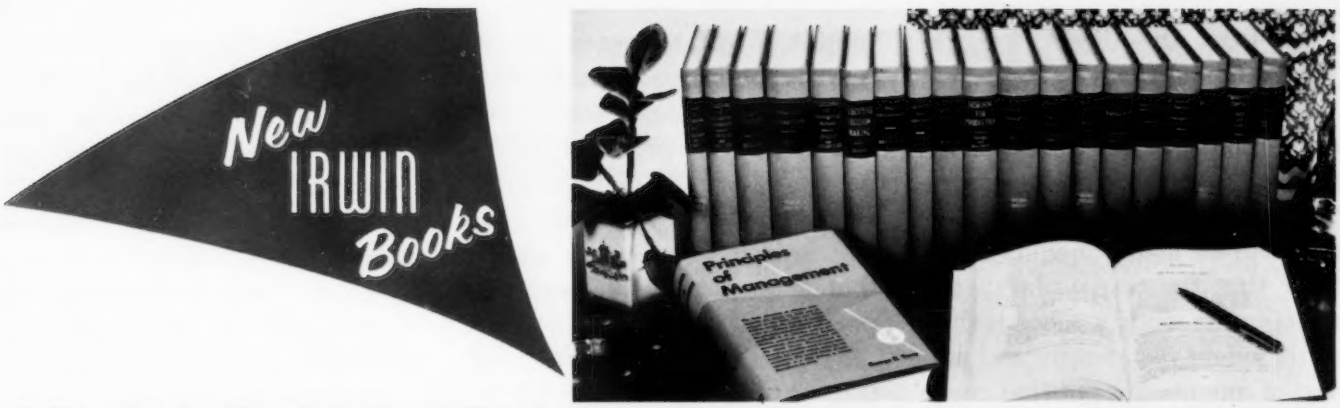
"But I have resorted to Plato, not for a mystical doctrine, but for a practical solution to the problem of peace; and we have found, not moral exhortations, but the outlines of a precise discipline: a discipline combining organic growth and harmonic form, a discipline that is a reconciliation of Strife and Love, of what Tolstoy called the mutually exclusive and separately incomprehensible conceptions of freedom and inevitability; and the image of such a reconciliation is this 'flower of peace, the Rose that cannot wither.'" (p. 237)

Sometimes the road to a reconciliation between the humanist and the scientist seems a long one. For example, although there are a few similarities between Read's thinking in *The Forms of Things Unknown* and **F. S. C. Northrop's** in his recent **PHILOSOPHICAL ANTHROPOLOGY AND PRACTICAL POLITICS** (Macmillan, $6.50), the differences are more numerous. Northrop, like Read and, to an extent, Snow, is obsessed with the need to establish peace. Northrop, however, as a law and philosophy professor, is understandably prejudiced in favor of conceptual thinking and scientific approaches. In fact, he spends considerable space (and almost indecipherable prose) to prove that imageless *ideas* are neurologically patterned and heritable.[7] He refers to the work of McCulloch (a neurological psychologist) and Pitts (a symbolic logician)—their theory of neurologically "trapped universals." They succeeded in confirming experimentally that remembered ideas (to paraphrase Northrop's language) in the concept-by-intuition meaning of radically empirical introspective and psychoanalytic psychology can be specified by epistemic correlations in the logically realistic public self world of discourse of neurological and behavioristic psychology and of mathematical physics and physiology generally. (In other words, memory could be explained neurologically.) This, of course, has later been amply demonstrated in computers. Northrop says at one point that "any human being is a cybernetic creature." (p. 70) Therefore, sin is "motor behavior conditioned by the neurological epistemic correlates of false theory." (p. 57) But the *idea* of sin is behavior—this is the important fact to Northrop, for from it he develops his theory that there can be ideas in some intellects that are not first in the senses, and that because such abstractions are the basis of science and Stoic Roman law (which are logically realistic, in his terminology), they are of the highest order in the cortical hierarchy of trapped impulses.

From these conclusions (so different from Read's and no more "physiological" at bottom) Northrop establishes his principle of mechanical causality in social and political systems. In order to reduce international relations to a science based on anthropological data and to arrive at a logical, deductively constructed international system of law, the proof that good conduct can be learned through "imageless concepts-by-postulation" must be so established.

For the present, Northrop condemns power politics as a vicious European heritage and presents an interesting case for the theory that the most American international stance would be to disen-

[7] Actually, the only clear reference to inherited patterns occurs in relation to the association area, the structure of which is such that ideas trapped there are arranged hierarchically from the least abstract to the most. He says that the "empty" neural nets so arranged are "laid down at birth or earlier." (He could, however, be referring to prenatal experience.)



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gage from the direct struggle with Russia (which he claims we have been ployed into by Russia's design and not our own best interests) and pour our energies and resources into the UN. "It needs to be made unequivocally clear that the responsibility for policing the world's peace is that of the world community and not that of any member of that community, however strong economically and militarily that member may be." (p. 206)[8] He further claims that the success of the Western European Union gives empirical confirmation of the fact that international and political legal institutions can be built where none existed before. However, he adds, attempts to draw up an international positive law such as the recent one by Clark and Sohn are premature. What must first be determined (by anthropology) is the complex and diversified living law[9] of the world. "Therefore, one will be wise to keep one's powder both ample and dry until, by a laborious, but not necessarily lengthy, tapping of the potential resources of its living law, a world morale comes to expression which will sustain an effective international law accompanied by atomic disarmament." (p. 16) He does not, incidentally, underrate the Communist threat to peace; he remarks that "in no domestic community where peace under law exists, do 100 per cent of the people believe in or behave according to the norms of the positive law; it is necessary merely that a quantitatively large proportion do." (p. 16)

The end devoutly wished for, then, by both Read and Northrop, is the same: a better world. Also, each would seek it through learning. But what different methods based on what different conceptions of human behavior!

In general, Northrop's book has many interesting insights and ideas, but except for chapters 1 and 11, it is almost impenetrably written. Moreover, it is our personal suspicion that, physiologically speaking, Northrop overemphasizes the neural circuitry of man's cortex and sadly undervalues the chemistry of the rest of the body, together with its effect on that circuitry. It would seem quite a different matter to program a man than it is to program a machine—and we are compelled to add (to transfer the quotation), vive la différence!

In the books reviewed here, the point of view of the scientist is still best expressed perhaps by the novelist, Snow. There are, of course, more extreme statements of this position—for example, that of B. F. Skinner, the famous behaviorist, in his article "The Design of Cultures" in *Evolution and Man's Progress (Daedalus,* Summer, 1961), in which he maintains that "Although the mechanisms which permit modi-

[8] The burden of Edmund Stillman and William Pfaff's well-received *The New Politics: America and the End of the Postwar World* (Coward-McCann, $4.00) is similar to this. They, too, advocate that the U.S. seek a plural world, a world of many centers of power and influence outside the framework of the cold war. In addition, they urge that the U.S. concentrate on making a permanent contribution to history rather than succumb to the belief that our supreme test as a nation lies in our competition with Soviet society.

[9] Positive law, or formal law, is effective only insofar as it embodies the living law, the personal morality and customs, of the majority of the people.

THE HUMANITIES

Kenneth Allsop, THE BOOTLEGGERS AND THEIR ERA (Doubleday)

W. H. Auden (ed.), VAN GOGH: A SELF PORTRAIT (1 vol. abridgment of 3 vol. *The Complete Letters of Vincent Van Gogh;* New York Graphic Society)

Ernest Becker, ZEN: A RATIONAL CRITIQUE (Norton)

Julius S. Bixler and others, IN SEARCH OF GOD AND IMMORTALITY (Garvin lectures by Mead, Hook, Tillich, and others; Beacon)

William Briggs (ed.), ANTHOLOGY OF ZEN (Evergreen Original)

Crane Brinton (ed.), THE FATE OF MAN (Braziller)

Editors of London Times Literary Supplement, THE BRITISH IMAGINATION (follow-up to popular *The American Imagination,* on current Brit. cult. and intell. scene; Atheneum)

Ernst Doblhofer, VOICES IN STONE: THE DECIPHERMENT OF ANCIENT SCRIPTS AND WRITINGS (Viking)

Will and Ariel Durant, THE AGE OF REASON BEGINS (vol. 7 of *The Story of Civilization;* S. & S.)

E. M. Forster, ALEXANDRIA (paperback reprint of famous hist. and guide; Doubleday)

Edward Gargan (ed.), THE INTENT OF TOYNBEE'S HISTORY: A COOPERATIVE APPRAISAL (Loyola Univ.)

Nahum N. Glatzer (ed.), THE REST IS COMMENTARY (comprehensive view of Judaic lit.; Beacon)

Robert Graves, COLLECTED POEMS (Doubleday)

Romano Guardini, POWER AND RESPONSIBILITY (Regnery)

William H. Harbaugh, POWER AND RESPONSIBILITY: THE LIFE AND TIMES OF THEODORE ROOSEVELT (Farrar)

Arthur Harding (ed.), RESPONSIBILITY IN LAW AND IN MORALS (1959 Conf. on Law in Soc.; So. Meth. Univ.)

Herbert Hoover, AN AMERICAN EPIC, VOLUME III: THE BATTLE ON THE FRONT LINE (Regnery)

Shoichi Imamura, PHILOSOPHY OF LIFE IN THE MODERN SCIENTIFIC AGE: PRINCIPLES OF LIVING FROM THE POINT OF VIEW OF MENTAL HYGIENE (Charles E. Tuttle)

fication of behavior are inherited, learned behavior does not emerge from, and is not an extension of, the unlearned behavior of the individual." (p. 538) (We are not sure just where and how he draws the line between learned and unlearned behavior, particularly in reference to evolutionary development. In some ways this seems to be a restatement of the old question about when the soul entered the body in evolution.) As for his view of a better culture through science, he says:

"We cannot predict the success or failure of a cultural invention with the same accuracy as we do that of a physical invention. It is for this reason that we are said to resort to value judgments in the second case. What we resort to is guessing. It is only in this sense that value judgments take up where science leaves off. When we can design small social interactions and, possibly, whole cultures with the confidence we bring to physical technology, the question of value will not be raised.

"So far, men have designed their cultures largely by guesswork, including some very lucky hits; but we are not far from a stage of knowledge in which this can be changed. The change does not require that we be able to describe some distant state of mankind toward which we are moving or 'deciding' to move. Early physical technology could not have foreseen the modern world, though it led to it. Progress and improvement are local changes. We better ourselves and our world as we go." (pp. 545-46)

But how the views vary among the scientists themselves! We admit that the width of the spectrum separates a Skinner from a **Loren Eiseley,** whose book we review next. Comparing Snow, the novelist who writes like a scientist, with Eiseley, the scientist who writes like a poet, almost gives the lie to Snow's classification of two cultures. Then again we realize that the majority of scientists probably collect on Skinner's end of the spectrum and that an anthropologist—such as Eiseley is—tends to close the gap.

At the start of THE FIRMAMENT OF TIME (Antheneum, $3.50), Eiseley says:

"A scientist writing around the turn of this century remarked that all of the past generations of men have lived and died in a world of illusions. The unconscious irony in his observation consists in the fact that this man assumed the progress of science to have

---

Karl Jaspers, THE FUTURE OF MANKIND (Univ. of Chicago)

James Joll, THREE INTELLECTUALS IN POLITICS (Blum, Rathenau, and Marinetti; Pantheon)

Ahmad Kamal, THE SACRED JOURNEY (pilgrimage to Mecca, in Eng. and Arabic; Duell)

Walter Kaufmann, THE FAITH OF A HERETIC (Doubleday)

Adrienne Koch, POWER AND MORALS AND THE FOUNDING FATHERS: ESSAYS IN THE INTERPRETATION OF THE AMERICAN ENLIGHTENMENT (Cornell)

Ivar Lissner, MAN, GOD, AND MAGIC (Putnam)

Thomas T. McAvoy (ed.), THE MIDWEST: MYTH OR REALITY (Univ. of Notre Dame)

Francois Mauriac, SECOND THOUGHTS: REFLECTIONS ON LITERATURE AND LIFE (World)

André Maurois, ADRIENNE: THE LIFE OF THE MARQUISE DE LAFAYETTE (McGraw)

Herbert J. Muller, FREEDOM IN THE ANCIENT WORLD (prehist. to end of Byzantium; Harper)

Robert Payne, THE THREE WORLDS OF BORIS PASTERNAK (Coward)

Frederik Polak, THE IMAGE OF THE FUTURE (2 vols. tr. from the Dutch by Elise Boulding; Univ. of Mich.)

Roscoe Pound, LAW FINDING THROUGH EXPERIENCE AND REASON (3 lectures; Univ. of Ga.)

Lord Radcliffe, THE LAW AND ITS COMPASS (Northwestern)

Robert Rosenblum, CUBISM AND TWENTIETH-CENTURY ART *(Abrams)*

Norman St. John-Stevas, LIFE, DEATH AND THE LAW (Indiana Univ.)

John H. Schaar, ESCAPE FROM AUTHORITY (on Erich Fromm; Basic Books)

Germain Seligman, OUR BUSINESS IS THEIR PLEASURE (life of prominent art dealer, Jacques Seligmann; Appleton)

Bernard Shaw, HOW TO BECOME A MUSICAL CRITIC (Hill & Wang)

George Kidder Smith, THE NEW ARCHITECTURE OF EUROPE: A GUIDE BOOK AND AN APPRAISAL (Meridian)

Elizabeth Stevenson, LAFCADIO HEARN (Macmillan)

W. A. Swanberg, CITIZEN HEARST (Scribners)

Hugh Thomas, THE SPANISH CIVIL WAR (Hist. Book Club Selection; Harper)

Otto Von Mering, A GRAMMAR OF HUMAN VALUES (Univ. of Pitts.)

Richard A. Wasserstrom, THE JUDICIAL DECISION: TOWARD A THEORY OF LEGAL JUSTIFICATION (Stanford)

Herbert Wechsler, PRINCIPLES, POLITICS, AND FUNDAMENTAL LAW: SELECTED ESSAYS (Harvard)

Burleigh Wilkins, CARL BECKER (M.I.T.)

FORTHCOMING

John Cage, SILENCE (experimental Am. composer; Wesleyan Univ.)

Henri Dorra, THE AMERICAN MUSE (Viking)

Norman Thomas, THE GREAT DISSENTERS (Socrates, Galileo, Tom Paine, Wendell Phillips, and Gandhi; Norton)

Arnold Toynbee, BETWEEN OXUS AND JUMNA (travels in Pakistan and Afghanistan; Oxford)

Laurens van der Post, THE HEART OF THE HUNTER (sequel to *The Lost World of the Kalahari;* Morrow)

William S. White, MAJESTY AND MISCHIEF: A MIXED TRIBUTE TO F.D.R. (McGraw)

been so great that a clear vision of the world without illusion was, by his own time, possible." (p. 5)

Derived from a series of lectures at the University of Cincinnati under a grant to promote a better understanding of how science throughout its own evolution has permeated and controlled the thought of men, this book relates briefly and simply the changes in man's view of nature and himself emerging with the advances in geology, anthropology, and biology. This, at least, is its primary purpose; but underlying this is Eiseley's desire, as he puts it, "to direct the thought of an increasingly urban populace toward nature and the mystery of the human emergence." (p. *v*)

Eiseley sees the postmedieval world as a sequence of changes in world views from the medieval conception of direct divine intervention in the creation of the universe and man. This direct-intervention belief re-emerged from time to time under the term "catastrophism." He finds the belief in such sudden cataclysmic events of creation gradually replaced by evolutionary concepts (he calls these "natural"), first in the evolution of the universe at large—in the cosmos, then in the evolution of the earth, and last in the evolution of the human species.

The first chapter, "How the World Became Natural," sketches the sixteenth- to early eighteenth-century view of the universe as an unchangeable and unchanging mechanism, a clockwork structure set going in its present form by the Creator and henceforth run without further intervention. Even Newton and Kepler held this static view of the cosmos. It was Kant and Laplace who introduced cosmic evolution by the mid-eighteenth century. Kant originally proposed the nebular hypothesis of star and planetary origin in clouds of rotating gas, which Laplace elaborated in his *Treatise on Celestial Mechanics*. Similarly, James Hutton challenged the accepted view that geological features such as glacial boulders were the results of world-wide disturbances like the Noachian Flood and that each cataclysm shut off one geological period from another. Hutton saw the earth as constantly wasting and being renewed through time. He duly appreciated the erosive power of a drop of rain; at the same time, however, he did not rule out occasional spectacular occurrences in nature. Thus by the 1750's, "cosmic evolution was openly discussed; geological change, timidly; the evolution of life, in subdued and sporadic

SCIENCE AND THE MILITARY

RECENT

Walter C. Alvarez, M.D., MINDS THAT CAME BACK (on mental illness; Lippincott)

Max Born, Werner Heisenberg, Pierre Auger, and Erwin Schrodinger, ON MODERN PHYSICS (Clarkson N. Potter)

Leonard Cottrell, HANNIBAL (Holt)

Otto Eisenschiml, THE HIDDEN FACE OF THE CIVIL WAR (Bobbs-Merrill)

Herbert Feis, JAPAN SUBDUED: THE ATOMIC BOMB AND THE END OF THE WAR IN THE PACIFIC (Princeton)

Lev Fridland, THE ACHIEVEMENT OF SOVIET MEDICINE (Twayne)

"Che" Guevara, GUERRILLA WARFARE (Monthly Review Press, 333 Sixth Ave., N. Y. 14)

Lancelot Hogben, MATHEMATICS IN THE MAKING (Doubleday)

Winthrop Kellogg, PORPOISES AND SONAR (Univ. of Chicago)

John Lilly, MAN AND DOLPHIN (Doubleday)

R. J. Minney, THE PRIVATE PAPERS OF HORE-BELISHA (Doubleday)

Jane Muir, OF MEN AND NUMBERS: THE STORY OF THE GREAT MATHEMATICIANS (Dodd)

J. J. O'Sullivan (ed.), PROTECTIVE CONSTRUCTION IN A NUCLEAR AGE: PROCEEDINGS OF THE SECOND PROTECTIVE CONSTRUCTION SYMPOSIUM (Macmillan)

George C. Reinhardt and William R. Kintner, HAPHAZARD YEARS (how America has gone to war; Doubleday)

Louisa E. Rhine, HIDDEN CHANNELS OF THE MIND (on ESP; S. & S.)

Edgar H. Schein and others, COERCIVE PERSUASION: A SOCIO-PSYCHOLOGICAL ANALYSIS OF THE "BRAINWASHING" OF AMERICAN CIVILIAN PRISONERS BY THE CHINESE COMMUNISTS (Norton)

Richard Schermerhorn, SOCIETY AND POWER (Random)

George A. Theodorson, STUDIES IN HUMAN ECOLOGY (Row Peterson)

Wynford Vaughan-Thomas, ANZIO (Holt)

Robert Penn Warren, THE LEGACY OF THE CIVIL WAR (Random)

Alan W. Watts, PSYCHOTHERAPY EAST AND WEST (Pantheon)

FORTHCOMING

Robert P. Allen, BIRDS OF THE CARIBBEAN (Viking)

Allan Broms, OUR EMERGING UNIVERSE (Doubleday)

Charles G. Finney, THE OLD CHINA HANDS (military hist.; Doubleday)

John Grayson, M.D., NERVES, BRAIN AND MAN (Taplinger)

Lt. Gen. Leslie R. Groves, NOW IT CAN BE TOLD: THE STORY OF THE MANHATTAN PROJECT (Harper)

MAO TSE-TUNG ON GUERRILLA WARFARE (Praeger)

Peter Matthiessen, THE CLOUD FOREST: A CHRONICLE OF THE SOUTH AMERICAN WILDERNESS (Viking)

Charles Noel-Martin, MAN FACING THE UNKNOWN (Fr. physicist; Criterion)

whispers." (p. 16) What's more, "Without anyone's knowing the precise way in which the change had been effected, the intellectual climate was altering." (p. 16) (At this point the reader is tempted to cast about for parallels: What scientific heresies today are harbingers of a twenty-first-century world-view?)

Eiseley's story of geological evolution continues in chapter 2, "How Death Became Natural." Seventeenth-century belief was strong that since the first creation there had been no species of animals or vegetables lost and no new ones produced. Therefore, the recognition of death—species death—had to precede serious evolutionary thought. The idea of extinction was both heretical and threatening, for if links could be lost out of the chain of life, what might not happen to man himself? For a while catastrophism persuaded man to accept both death and progressive change; according to this belief, the earth as a result of a succession of violent cataclysms had been completely depopulated and repopulated over and over again with different forms of flora and fauna. It was for Sir Charles Lyell, who published his *Principles of Geology* in 1830, to return to the natural evolutionism of Hutton and to see "that every living creature competed for living space and that every change of season, every shift of shore line, gave advantages to some forms of life and restricted space available to others"—that over great stretches of time "it was inevitable that some species would slowly suffer a reduction in numbers and, by degrees, perish, to be replaced by others." (pp. 51-52) How this came about escaped him; it was for Darwin to contribute.

Chapter 3 continues with Darwin's contribution under the title "How Life Became Natural." Often, says Eiseley, Darwin has existed "in solitary grandeur as a kind of psychological father figure to biologists." He (Eiseley) sets about in this chapter, however, to show how the idea of natural selection, rather than being the progeny solely of Darwin (or Darwin and his contemporary, Wallace, as some claim), began as a conservative eighteenth-century observation and was altered by slow degrees into something "which set the whole of life adrift in an unfixed wilderness." Behind Darwin, he sees Bruckner and Malthus, who developed the conservative (as contrasted with the later creative) concept of natural selection. This concept is of a self-regulating balance of nature, a struggle for existence among

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William Benton, THE VOICE OF LATIN AMERICA (foreword by Adlai Stevenson; Harper)

COOPERATION FOR PROGRESS IN LATIN AMERICA (Com. for Econ. Devel.)

Adrian Cowell, THE HEART OF THE FOREST (expedition into Amazon basin; Borzoi)

Howard S. Ellis (ed.), ECONOMIC DEVELOPMENT FOR LATIN AMERICA (Internat'l Econ. Ass'n conf.; St. Martin's)

Thomas L. Karnes, THE FAILURE OF UNION: CENTRAL AMERICA, 1824-1960 (Univ. of N. C.)

Herbert Matthews, THE CUBAN STORY (N. Y. *Times* correspondent; Braziller)

Irving P. Pflaum, TRAGIC ISLAND: HOW COMMUNISM CAME TO CUBA (Chicago *Sun-Times* correspondent; Prentice)

William Lyle Schurz, BRAZIL: THE INFINITE COUNTRY (Dutton)

Robert Taber, M-26, BIOGRAPHY OF A REVOLUTION (Cuban Rev. by CBS newsman; Lyle Stuart)

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Ferenc A. Vali, RIFT AND REVOLT IN HUNGARY: NATIONALISM VERSUS COMMUNISM (Harvard)

AFRICA

James Cameron, THE AFRICAN REVOLUTION (correspondent of London *News Chronicle;* Random)

Robert Collis, AFRICAN ENCOUNTER (Irish pediatrician in Nigeria; Scribner)

Hugh Fearn, AN AFRICAN ECONOMY (Kenya, 1903-53; Oxford)

John Hughes, THE NEW FACE OF AFRICA SOUTH OF THE SAHARA (correspondent for *Christian Science Monitor;* Longmans)

James Morris, SOUTH AFRICAN WINTER (Contemp. Affairs Society Selection; Pantheon)

species similar to a pruning process—a diminution of numbers causing the remainder to arrive at a greater perfection (sometimes called "natural government," the concept borrowed by Adam Smith). Also he mentions Darwin's contemporary, Edward Blyth, who in 1837 shortly after Darwin had returned from his famous voyage in the "Beagle," wrote that " 'as man, by removing species from their appropriate haunts, superinduces changes on their physical constitution and adaptations [domestication and selective breeding], to what extent may not the same take place in wild nature, so that, in a few generations, distinctive characters may be acquired, such as are recognized as indicative of specific diversity. *May not then, a large proportion of what are considered species have descended from a common heritage?*' " (pp. 78-79) In 1859 came Darwin's *Origin of Species*, in which he argued that no environment is static and that selection constantly produces new organisms as time and slowly changing geological conditions alter the existing world. As Eiseley puts it, "The lime in our bones, the salt in our blood were . . . part of our heritage from an ancient and forgotten sea." (p. 82) And it is here that Eiseley's personal vision appears:

> "The species alter, one might say, but the *Form*, that greater animal which stretches across the millennia, survives. There is a curious comfort in the discovery. In some parts of the world, if one were to go out into the woods, one would find many versions of oneself, with fur and grimaces, surveying one's activities from behind leaves and thickets. It is almost as though somewhere outside, somewhere beyond the illusions, the several might be one." (p. 82)

This vision he refers to later in the book (pp. 167-69) when he replies to a student's question, Is there a direction in evolution? The passage is as beautiful a piece of writing as we have come across in a long time.

Chapter 4, "How Man Became Natural," is the story of human paleontology. From the discovery of great ape fossils in the Tertiary beds of northern India in 1837 and Agassiz' work in glacial geology, the study of human evolution gathered impetus. Early in the nineteenth-century fossils of Neanderthal man were discovered in Germany, and from these finds came the startling evidence that "benighted" as these presapiens Neanderthalians were, they buried their dead with offerings in apparent anticipation of an afterlife and were capable of altruistic care of adults. Since then man's origins have been traced back and back in Africa, to Dart's small man-apes of about 1,000,000 B.C. and to Leakey's most recent ape-man discovery dating to 700,000 B.C. The latter ape-man was a true shaper of tools, and his youthful body had been placed where it would be carefully protected from scavenging animals. As Eiseley says, bone by bone and flint by flint, man has been traced backward in time more successfully than even Darwin dreamed.

Before leaving this chapter, we want to relate the discussion of early man's nature that is woven throughout it. Eiseley calls it the dark question of man's dual nature: Was early man a brutish, aggressive creature, club-swinger par excellence, sadist and terror of everything around; or was he a relatively weak creature capitalizing on superior intelligence and a social nature, with a capacity for human suffering and human love? Or putting it another way, he says "Man has, in scientific terms, become natural, but the nature of his 'naturalness' escapes him." (p. 114)

With this question in mind, Eiseley goes on to the last two chapters, "How Human Is Man?" and "How Natural Is 'Natural'?" Eiseley describes what for him are the two foundations of the "good life": the stability of nature and man's cultural world "that had gotten him out of bed in the morning for many thousands of years, that had taught him manners, how to love, and to see beauty, and how, when the time came, to die." (p. 129) The deeper interpenetration of these two is for Eiseley the "symbolic road into the Garden." He credits its discovery to Bacon, whom he quotes thus: " 'Trial should be made . . . whether the commerce between the mind of men and the nature of things . . . might by any means be restored to its perfect and original condition, or if that may not be, yet reduced to a better condition than that in which it now is.' " (p. 127) Eiseley agrees with the novelist Wright Morris, who remarked that it was not the threat—implied in the atomic bomb—that man would have no future that appalled him, but rather the probable nature of man's future if he continues to isolate himself from nature except as exploiter and from the virtue, art, and values that he has fashioned for himself so painfully throughout his emergent history. Here Eiseley levels a criticism at contemporary science for turning its back on these considerations and rushing madly after "the Garden" somewhere in an infinite future. "We have abandoned the past without realizing that without the past the pursued future has no meaning, that it leads, as Mor-

ris has anticipated, to the world of artless, dehumanized man." (p. 130)

He works out several variations of his two principal personal tenets: the way of love is not of today but of the whole journey (meaning man's long emergence) and the society worthy to survive is the one more interested in the cultivation of noble minds than in change. In another place he quotes an anonymous "perceptive philosopher": " 'The special value of science . . . lies not in what it makes of the world, but in what it makes of the knower.' " (p. 172) Or, "It is not my intention here to decry learning. It is only to say that we must come to understand that learning is endless and that nowhere does it lead us behind the existent world. It may reduce the prejudices of ignorance, set our bones, build our cities. In itself it will never make us ethical men." (p. 160)

Because of his evolutionary approach—his appreciation of what he calls the *Form*—Eiseley sees contemporary man as but a part of his whole evolutionary pattern, in other words, "Man is not totally compounded of the nature we profess to understand. Man is always partly of the future, and the future he possesses a power to shape." (p. 180) As to the meaning of it all, he says that man "stands at the point where the miraculous comes into being, and after the event he calls it 'natural'." (p. 179)

Eiseley is undoubtedly one of the new breed of scientific mystics like Schrodinger, Harrington, Jeans, Huxley, Oppenheimer, Sinnott, and Bridges, for whom reality has become Janus-faced and knowledge sometimes seems a bitch goddess. They can say with Kierkegaard that "there comes a critical moment where everything is reversed, after which the point becomes to understand more and more that there is something which cannot be understood." (Quoted in Eiseley, p. 177)

MEANWHILE, of course, as Snow would point out, things must get done. The business of life must go on. But Snow also emphasizes that it is the practical man and the practical world of affairs that would benefit from the social creativity a *rapprochement* would offer. As he says, "at the heart of thought and creation we are letting some of our best chances go by default"[10]—chances that could be produced from the active clashing of these two worlds. And Snow, like Read, would begin by a rethinking of our education. If we could achieve both creativity and a sense of balance, we could ride out more than this storm of history.

[10] *The Two Cultures*, p. 17.

BUSINESS HISTORY

E. Ray Canterbery, THE PRESIDENT'S COUNCIL OF ECONOMIC ADVISERS: A STUDY OF ITS FUNCTIONS AND ITS INFLUENCE ON THE CHIEF EXECUTIVE'S DECISIONS (Exposition)

Christopher Colles (author) and Walter W. Rostow (ed.), A SURVEY OF THE ROADS OF THE UNITED STATES OF AMERICA, 1789 (Harvard)

John Patterson Davis, CORPORATIONS: A STUDY OF THE ORIGIN AND DEVELOPMENT OF GREAT BUSINESS COMBINATIONS AND OF THEIR RELATION TO THE AUTHORITY OF THE STATE (Capricorn reprint)

James Edwards, HISTORY OF PUBLIC ACCOUNTING IN THE UNITED STATES (Bur. of Bus. & Econ. Res.; Michigan State Univ.)

Philip Florence, OWNERSHIP, CONTROL AND SUCCESS OF LARGE COMPANIES: AN ANALYSIS OF ENGLISH INDUSTRIAL STRUCTURE AND POLICY (Quadrangle Books)

Walter T. Gutman, YOU ONLY HAVE TO GET RICH ONCE (brokerage firm, Stearns & Co.; Dutton)

Louis M. Hacker, MAJOR DOCUMENTS IN AMERICAN ECONOMIC HISTORY (Van Nostrand)

Seymour Harris (ed.), AMERICAN ECONOMIC HISTORY (McGraw)

Robert Hume, A PIGMY MONOPOLIST (pioneer in salmon-canning industry; Univ. of Wis.)

Naum Jasny, SOVIET INDUSTRIALIZATION, 1928-1952 (Univ. of Chicago)

Marcus Jernegan, LABORING AND DEPENDENT CLASSES IN COLONIAL AMERICA, 1607-1783 (Ungar)

Edward Kirkland, INDUSTRY COMES OF AGE, 1860-1897 (Holt)

Douglass C. North, THE ECONOMIC GROWTH OF THE UNITED STATES (Prentice)

Wilson Payne, INDUSTRIAL DEMANDS UPON THE MONEY MARKET, 1919-57 (Nat'l Bur. of Econ. Res.)

Sylvester Petro, THE KOHLER STRIKE (Regnery)

Robert M. Rauner, SAMUEL BAILEY AND THE CLASSICAL THEORY OF VALUE (Harvard)

Albert Rees, REAL WAGES IN MANUFACTURING, 1890-1914 (Princeton)

Dorothea D. Reeves, RESOURCES FOR THE STUDY OF ECONOMIC HISTORY (pre-20th cent.; Grad. Sch. of Bus. Admin., Harvard)

Elizabeth Schumpeter, ENGLISH OVERSEAS TRADE STATISTICS, 1697-1808 (includes commentary and memoir of Mrs. Schumpeter; Oxford)

TRENDS IN THE AMERICAN ECONOMY IN THE NINETEENTH CENTURY (Princeton)

Jacob Viner, RELIGIOUS THOUGHT AND ECONOMIC SOCIETY: THE EUROPEAN BACKGROUND (Princeton)

ALSO AVAILABLE

THERE ARE, of course, many recent books other than those discussed above on the interrelation of science and the humanities and their separate and joint contributions to the world of practical affairs. We want to make special mention of the following: S.L.M. Barlow's *The Astonished Muse* (impact of the creative artist on his society from the time of the O. T. prophets to the present; John Day); Carlos Chavez' *Musical Thought* (music as communication; Harvard); Joseph Chiari's *Realism and Imagination* (the modern conflict between rationalism and creative imagination; Macmillan); T. Echoff and K. D. Jacobsen's *Rationality and Responsibility* (Humanities Pr.); E. W. Hall's *Our Knowledge of Fact and Value* (Univ. of N. C.); Bates Lowry's *The Visual Experience* (Abrams); Thomas Munro and Herbert Read's *The Creative Arts in American Education* (Harvard); Hajime Nakamura's *The Way of Thinking of Eastern Peoples* (the empirical orientation of Asiatic peoples; Jap. Gov't Printing Bureau for UNESCO); H. E. Peet and Harriet Sleeper's *The Creative Individual: A Study of New Perspectives in American Education* (Ronald); Herbert Read's *The Grass Roots of Art* (Meridian); James R. Newman's *Science and Sensibility* (S. & S.); Gerard Piel's *Science in the Cause of Man* (Piel is editor of *Scientific American;* Knopf); I. I. Rabi's *My Life and Times as a Physicist* (Nobel prize winner on the need to bring adequate scientific understanding to the councils of the national government and to encourage the cross-fertilization of sciences and humanities; Claremont College); Edouard Roditi's *Dialogues on Art* (interviews with Chagall, Miro, Henry Moore, and others; Humanities Pr.); Helmut Schoeck and J. W. Wiggins' *Scientism and Values* (Van Nostrand); Louis Sullivan's *Democracy—A Man Search* (on the role of art and architecture in democracy; Wayne State); Richard Thruelsen and John Kobler's second collection of articles from the *Saturday Evening Post* called *Adventures of the Mind* (topics from science to literature to sociology by leading scholars and writers; Houghton); Paul Weiss' *The World of Art* (famous philosopher on ethics, science and art, and the emotions; So. Ill. Univ.); and Frank A. Wilson's *Art into Life* (art as an indispensable, biological necessity of the human species; Citadel).

FROM THE GIFT STALLS

FROM OUR perennial scanning of publishers' Christmas lists, with a few additions of our own from the whole year's output, we make the following suggestions for the coming season. First are those de luxe editions that are works of the publishing art and certainly make handsome gifts: *The American Heritage Book of Indians* (S. & S.); Stringfellow Barr's *The Will of Zeus* (history of the Hellenic age; Lippincott); Lucius Beebe's *Mr. Pullman's Elegant Palace Car* (Doubleday); Renzo Chiarelli and others, *European Painting in the Fifteenth Century* (Viking); Frank Debenham's *Discovery and Exploration* (man's astonishing wanderings; Doubleday); Doubleday's 4-volume *Encyclopedia of World Travel,* edited by Nelson Doubleday and C. Earl Cooley; David D. Duncan's *Picasso's Picassos: The Treasures of La Californie* ($30; Harper); *The Horizon Book of the Renaissance* by the Editors of *Horizon* (Doubleday); *The Epic of Man* by the Editors of *Life* (Prentice); *Great Houses of Europe* with an introduction by Sacheverell Sitwell (the 40 most beautiful private dwellings in Europe; Putnam); J. R. Humphreys' *The Lost Towns and Roads of America* (Doubleday); René Huyghe and François Cali's *The Wonders of France* (Viking); McGraw-Hill's *The Illustrated World-of-the-Bible Library* with commentary, maps, and photographs, including 1,500 color plates (Old Testament, 4 volumes, $70; New Testament, 5 volumes, $87.50); *Indian Art in America* (New York Graphic Society); R. F. Jordan and Bodo Cichy's *The World of Great Architecture* (Viking); Fujio Koyama and John Figgess' *2,000 Years of Oriental Ceramics* (Abrams); Björn Landstrom's *The Ship: An Illustrated History* (Doubleday); *Martyn Green's Treasury of Gilbert and Sullivan* (complete librettos for all 11 operas, music, notes, and production sketches; S. & S.); André Parrott's *The Arts of Assyria* (second vol. of *Arts of Mankind;* Golden Press); *The Dawn of Civilization* edited by Stuart Piggott (McGraw); *Medieval English Christmas Carols* edited by Rossel H. Robbins (Columbia); Braziller's *Picasso: Toreros* (text by Jaime Sabartes; foreword by Jean Cocteau); *Marc Chagall: Gouaches* edited by Georg Schmidt (limited edition of 250 copies at $50; Abrams); *The Living World of*

the Bible edited by M.-J. Stève (maps and photos are placed alongside text of Old Testament; World); W. F. Volbach's *Early Christian Art* (Abrams); and V. W. von Hagen's *The Ancient Sun Kingdoms of the Americas: Aztec, Maya, Inca* (World).

For the hobbyists and sportsmen, there are these titles: Leonard Barden's *Modern Chess Miniatures* (McKay); Robert C. Bell's *Board and Table Games from Many Civilizations* (Oxford); John R. Buckley's *Cars of the Connoisseur* (Macmillan); Raymond R. Camp's *Hunting Trails: A Sportsman's Treasury* (Appleton); Charles E. Chapel's *Guns of the Old West* (Coward); Jan de Hartog's *Waters of the New World* (boat journey from Houston to Nantucket; Atheneum); Delmar Morgan's *Power-Boat Cruising* (St. Martin's); Eliot Elisofon's *Color Photography* (Viking); *Esquire's Great Men and Moments in Sport* edited by Clay Felker (Harper); Tom Flaherty's *The Masters* (the tournament from 1934 through 1960; Holt); Frederick II of Hohenstaufen's *The Art of Falconry* in the only complete translation by C. A. Wood and F. M. Fyfe (Stanford); Peter Hirsch's *The Last Man in Paradise* (big game hunting; Doubleday); John Kieran and Arthur Daley's *The Story of the Olympic Games* (Lippincott); Beaumont Newhall's *The Daguerreotype in America* (Duell); Maurice Rheim's book on collectors and collecting, *The Strange Life of Objects* (Atheneum); Ralph Stein's *Treasury of the Automobile* (Ridge Press); the new edition of *Taylor's Encyclopedia of Gardening* (Houghton); Cynthia Westcott's *Are You Your Garden's Worst Pest?* (good book but bad gift title; Doubleday); and Michael Woodford's *A Manual of Falconry* (C. T. Branford Co.).

Then, there is, of course, that wonderful category of books just for pleasure: Cleveland Amory's account of the decline and fall of society's famous play places, *The Last Resorts* (a paperback stocking gift; Universal); *Peter Freuchen's Adventures in the Arctic* edited by Dagmar Freuchen (Messner); Alvin M. Josephy, Jr.'s *The Patriot Chiefs: A Chronicle of American Indian Leadership* (Viking); William Hazlitt Upson's *The Best of Botts* (from the famous *Saturday Evening Post* series; McKay); and these

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PEOPLE WILL BE TALKING ABOUT

RECENT

Fred J. Cook, A TWO DOLLAR BET MEANS MURDER (Dial)

Norman Ford, THE BLACK, THE GRAY AND THE GOLD (novel of scandal at some place like West Pt.; Doubleday)

Gladys Schmitt, REMBRANDT (Random)

Auberon Waugh, THE FOXGLOVE SAGA (son of Evelyn; S. & S.)

Theodore H. White, THE MAKING OF THE PRESIDENT, 1960 (Atheneum)

FORTHCOMING

John Bainbridge, THE SUPER-AMERICAN STATE (on Tex.—part appeared in *New Yorker;* Doubleday)

Eugene Burdick, THE BLUE OF CAPRICORN (co-author of *The Ugly American* explores Oceania; Houghton)

Hortense Calisher, FALSE ENTRY (new fiction style; Little, Brown)

Morley Callaghan, A PASSION IN ROME (Edmund Wilson—"most unjustly neglected novelist"; Coward)

Bruce Catton, THE COMING FURY (vol. 1 of *The Centennial Hist. of the Civil War;* Doubleday)

Francis Chichester, ALONE ACROSS THE ATLANTIC (Doubleday)

Marquis Childs, THE PEACEMAKERS (novel of conf. of world powers; Harcourt)

Bob Considine, ROBERT L. RIPLEY: THE MODERN MARCO POLO (Doubleday)

William O. Douglas, MY WILDERNESS: EAST TO KATAHDIN (companion to *My Wilderness: The Pacific West;* Doubleday)

Maurice Druon, ALEXANDER THE GOD (novel of med. Fr. royalty by outstanding Fr. author; Scribners)

Charles B. Flood, MONMOUTH (promising new author; Houghton)

Mitchell Goodman, THE END OF IT (Norman Mailer—"unlike any other war novel I ever read"; Horizon)

Graham Greene, THE COMPLAISANT LOVER (successful London play due in New York this fall; Viking)

MacKinlay Kantor, SPIRIT LAKE (author of *Andersonville;* World)

Richard Llewellyn, A MAN IN A MIRROR (pop. Welsh author; Doubleday)

Carson McCullers, CLOCK WITHOUT HANDS (novel; play due on Broadway this winter; Houghton)

Bernard Malamud, A NEW LIFE (prize-winning new author; Farrar)

S. J. Perelman, THE RISING GORGE (first Perelman collection since *The Road to Miltown;* S. & S.)

Leo Rosten, CAPTAIN NEWMAN, M.D. (author of H°Y°M°A°N° K°A°P°L°A°N°; Harper)

J. D. Salinger, FRANNY AND ZOOEY (novellas by author of *Catcher in the Rye;* Little, Brown)

Mark Schorer, SINCLAIR LEWIS: AN AMERICAN LIFE (McGraw)

Heimoto von Doderer, THE DEMONS (2 vols. by author considered a match for Mann; Knopf)

Patrick White, RIDERS IN THE CHARIOT (major novel; Viking)

William Carlos Williams, MANY LOVES AND OTHER PLAYS (New Directions)

business novels: Fred Harvey's *The Lion Pit* (a company-dominated steel town; Little, Brown); A. C. Mangel's and A. F. Byers' *The Challenge* (a billionaire's scheme to cure society's ills; Rolley & Reynolds); Paul Rader's *Dark Dominion* (the Texas oil business; Viking); and reputedly the best of the lot, Edward Streeter's *Chairman of the Bored* (a busy executive in retirement; Harper).

And for those whose taste runs to the piquant ("baroque" in smart circles) or the intellectual, we would suggest the following: Sybille Bedford's *The Faces of Justice* (from trials in 5 European countries; S. & S.); Cedric Belfrage's *My Master, Columbus* (satire on arrival of Columbus in New World; Doubleday); Martin Gardner's *The Second Scientific American Book of Mathematical Puzzles and Diversions* (S. & S.); Frank Getlein's *A Modern Demonology* (an off-beat book on modern demons; Potter); Vincent J. R. Kehoe's *Wine, Women and Toros!* (Fiesta de Toros in the culture of Spain; Hastings House); Henry Miller's long-banned *avant-garde* novel, *Tropic of Cancer* (Grove); Jean Rostand's *Bestiaire d'amour* (classic by renowned French biologist; Doubleday); World's edition of Dickens' *A Christmas Carol* illustrated by Ronald Searle; Sacheverell Sitwell's *Golden Wall and Mirador* (travel in Peru, Guatemala, Colombia, Ecuador, and Havana; World); and a volume of short stories by one of England's angry young men, John Wain—*Nuncle* (St. Martin's).

BOOKS RECEIVED

Aubrey, Henry G. with the assistance of Joel Darmstadter. *Coexistence: Economic Challenge and Response.* National Planning Association, Washington, D. C., 1961. $5.00.

Bass, Frank M.; Buzzell, Robert D.; Greene, Mark R.; Lazer, William; Pessemier, Edgar A.; Shawver, Donald L.; Shuchman, Abraham; Theodore, Chris A.; Wilson, George W., eds. *Mathematical Models and Methods In Marketing.* Richard D. Irwin, Inc., Homewood, Ill., 1961. $11.35.

Beeby-Thompson, Arthur. *Black Gold.* Doubleday & Company, Inc., Garden City, N. Y., 1961. $5.95.

Edwards, Edgar O. and Bell, Philip W. *The Theory and Measurement of Business Income.* University of California Press, Berkeley and Los Angeles, 1961. $7.50.

Eells, Richard and Walton, Clarence. *Conceptual Foundations of Business,* Richard D. Irwin, Inc., Homewood, Ill., 1961. $9.35.

Eisenstein, Louis. *The Ideologies of Taxation.* The Ronald Press Company, New York, 1961. $5.00.

Faville, David E. *Selected Cases in Marketing Management.* Prentice-Hall, Inc., Englewood Cliffs, N. J., 1961. $6.60.

Hastings, Paul G. *Fundamentals of Business Enterprise.* D. Van Nostrand Co., Inc., Princeton, N. J., 1961.

Haynes, W. Warren, and Massie, Joseph L. *Management: Analysis, Concepts and Cases.* Prentice-Hall, Inc., Englewood Cliffs, N. J., 1961. $10.60.

Isard, Walter, in association with Bramhall, David F.; Carrothers, Gerald A. P.; Cumberland, John H.; Moses, Leon N.; Price, Daniel O.; Schooler, Eugene W. *Methods of Regional Analysis: an Introduction to Regional Science.* Published jointly by The Technology Press of the Massachusetts Institute of Technology and John Wiley & Sons, Inc., New York, 1960.

Longstreet, James R. *Cases in Financial Management.* Wadsworth Publishing Company, Inc., San Francisco, 1961.

Luck, David J.; Wales, Hugh G.; Taylor, Donald A. *Marketing Research.* (2d ed.) Prentice-Hall, Inc., Englewood Cliffs, N. J., 1961. $11.35.

Martin, E. Wainwright, Jr. *Electronic Data Processing.* Richard D. Irwin, Inc., Homewood, Ill., 1961. $10.60.

Mauser, Ferdinand F. *Modern Marketing Management, An Integrated Approach.* McGraw-Hill Book Co., Inc., New York, 1961. $7.95.

Mikesell, R. M. and Hay, Leon E. *Governmental Accounting.* (3d ed.) Richard D. Irwin, Inc., Homewood, Ill., 1961. $11.35.

Morris, Ruby Turner. *Fundamentals of Economics.* The Ronald Press Company, New York, 1961. $7.00.

Newman, William H., and Summer, Charles E., Jr. *The Process of Management.* Prentice-Hall, Inc., Englewood Cliffs., N. J., 1961. $10.60.

Owens, Richard N. *Management of Industrial Enterprise.* (4th ed.) Richard D. Irwin, Inc., Homewood, Ill., 1961. $10.60.

Peer, Daniel I. *Real Estate Problems That Everyone Should Know, for the Home, Farm, Business.* Greenwich Book Publishers, Inc., New York, 1961. $2.00.

Report of the Commission on Money and Credit. *Money and Credit.* Prentice-Hall, Inc., Englewood Cliffs, N. J., 1961. $3.95 (cloth), $2.00 (paper).

Tax Institute Symposium. *Management's Stake in Tax Administration.* Tax Institute, Inc., Princeton, N. J., 1961. $6.00.

Voris, William. *Production Control.* (Revised Edition) Richard D. Irwin, Inc., Homewood, Ill., 1961. $10.60.

Wolf, William B. *The Management of Personnel.* Wadsworth Publishing Co., Inc., San Francisco, 1961.



On the moon . . . and under it

Sometime soon a man will thrust to the vast regions of outer space in an effort to reach the moon.

On the day of the moon-shot certain other things will also happen. A woman will telephone her grocer. A man will sail a boat. A boy will play a trumpet.

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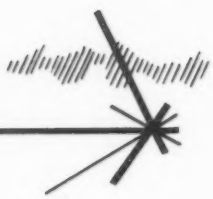
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